# Appendix B Air Quality Calculations

***Beach Edinger Net Criteria Pollutant Emissions***

| *Operational* | *Development Trend* | *Emission Type* | *ROG* | *NOx* | *CO* | *SO2* | *PM10* | *PM2.5* |
|---|---|---|---|---|---|---|---|---|
| Residential | Increase | Natural Gas | 4.95 | 64.12 | 27.85 | 0 | 0.12 | 0.12 |
| | | Landscape | 0.25 | 0.04 | 3.09 | 0 | 0.01 | 0.01 |
| | | Consumer Products | 328.32 | 0 | 0 | 0 | 0 | 0 |
| | | Architectural Coatings | 12.12 | 0 | 0 | 0 | 0 | 0 |
| | | Mobile | 151.12 | 138.49 | 1578.42 | 4.75 | 770.63 | 149.53 |
| | | ***Subtotal*** | 496.76 | 202.65 | 1609.36 | 4.75 | 770.76 | 149.66 |
| Commercial/Office | Decrease | Natural Gas | 0.25 | 3.49 | 2.93 | 0 | 0.01 | 0.01 |
| | | Landscape | 0.25 | 0.04 | 3.09 | 0 | 0.01 | 0.01 |
| | | Consumer Products | 0 | 0 | 0 | 0 | 0 | 0 |
| | | Architectural Coatings | 2.59 | 0 | 0 | 0 | 0 | 0 |
| | | Mobile | 50.82 | 54.38 | 596.82 | 1.84 | 301.54 | 58.41 |
| | | ***Subtotal*** | 53.91 | 57.91 | 602.84 | 1.84 | 301.56 | 58.43 |
| | | ***Total Net Emissions*** | **442.85** | **144.74** | **1006.52** | **2.91** | **469.2** | **91.23** |
| | | *Net Natural Gas* | *4.7* | *60.63* | *24.92* | *0* | *0.11* | *0.11* |
| | | *Net Landscape* | *0* | *0* | *0* | *0* | *0* | *0* |
| | | *Net Consumer Products* | *328.32* | *0* | *0* | *0* | *0* | *0* |
| | | *Net Architectural Coatings* | *9.53* | *0* | *0* | *0* | *0* | *0* |
| | | *Net Mobile* | *100.3* | *84.11* | *981.6* | *2.91* | *469.09* | *91.12* |

Note: All emissions are derived from the URBEMIS runs performed for the project

**6/26/2009 7:46:04 AM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\0407 Beach-Edinger Corridor Study Program EIR\Air Data\Beach-Edinger - Area-Operational Res.urb924

Project Name: Beach-Edinger - Operational

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 345.64 | 64.16 | 30.94 | 0.00 | 0.13 | 0.13 | 81,752.05 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 151.12 | 138.49 | 1,578.42 | 4.75 | 770.63 | 149.53 | 468,052.42 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 496.76 | 202.65 | 1,609.36 | 4.75 | 770.76 | 149.66 | 549,804.47 |

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| Natural Gas | 4.95 | 64.12 | 27.85 | 0.00 | 0.12 | 0.12 | 81,746.43 |
| Hearth - No Summer Emissions | | | | | | | |
| Landscape | 0.25 | 0.04 | 3.09 | 0.00 | 0.01 | 0.01 | 5.62 |
| Consumer Products | 328.32 | | | | | | |
| Architectural Coatings | 12.12 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 345.64 | 64.16 | 30.94 | 0.00 | 0.13 | 0.13 | 81,752.05 |

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|---|---|---|---|---|---|---|---|
| Apartments low rise | 145.19 | 132.74 | 1,515.71 | 4.56 | 738.80 | 143.37 | 448,875.74 |
| Other | 5.93 | 5.75 | 62.71 | 0.19 | 31.83 | 6.16 | 19,176.68 |
| TOTALS (lbs/day, unmitigated) | 151.12 | 138.49 | 1,578.42 | 4.75 | 770.63 | 149.53 | 468,052.42 |

Operational Settings:

Does not include correction for passby trips

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Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---|---|---|---|---|---|---|
| Apartments low rise | 400.00 | 6.62 | dwelling units | 6,400.00 | 42,368.00 | 428,035.42 |
| Other | | 10.00 | 1000 sq ft | 205.60 | 2,056.00 | 18,448.49 |
| | | | | | 44,424.00 | 446,483.91 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Auto | 49.4 | 0.0 | 100.0 | 0.0 |
| Light Truck < 3750 lbs | 7.3 | 0.0 | 100.0 | 0.0 |
| Light Truck 3751-5750 lbs | 23.9 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 11.4 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 1.8 | 0.0 | 83.3 | 16.7 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.5 | 0.0 | 60.0 | 40.0 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.0 | 0.0 | 20.0 | 80.0 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.6 | 0.0 | 0.0 | 100.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motorcycle | 2.7 | 33.3 | 66.7 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.1 | 0.0 | 90.9 | 9.1 |

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Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 12.7 | 7.0 | 9.5 | 13.3 | 7.4 | 8.9 |
| Rural Trip Length (miles) | 17.6 | 12.1 | 14.9 | 15.4 | 9.6 | 12.6 |
| Trip speeds (mph) | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| % of Trips - Residential | 32.9 | 18.0 | 49.1 | | | |
| | | | | | | |
| % of Trips - Commercial (by land use) | | | | | | |
| Other | | | | 2.0 | 1.0 | 97.0 |

**6/26/2009 7:51:32 AM**

Urbemis 2007 Version 9.2.4

Combined Summer Emissions Reports (Pounds/Day)

File Name: P:\Projects - All Employees\+10000\0407 Beach-Edinger Corridor Study Program EIR\Air Data\Beach-Edinger - Area-Operational C-O emis cred.urb924

Project Name: Beach-Edinger - Operational Trip Credit

Project Location: South Coast AQMD

On-Road Vehicle Emissions Based on: Version : Emfac2007 V2.3 Nov 1 2006

Off-Road Vehicle Emissions Based on: OFFROAD2007

Summary Report:

AREA SOURCE EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 3.09 | 3.53 | 6.02 | 0.00 | 0.02 | 0.02 | 4,190.42 |

OPERATIONAL (VEHICLE) EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 50.82 | 54.38 | 596.82 | 1.84 | 301.54 | 58.41 | 181,871.24 |

SUM OF AREA SOURCE AND OPERATIONAL EMISSION ESTIMATES

| | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| TOTALS (lbs/day, unmitigated) | 53.91 | 57.91 | 602.84 | 1.84 | 301.56 | 58.43 | 186,061.66 |

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Area Source Unmitigated Detail Report:

AREA SOURCE EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOx | CO | SO2 | PM10 | PM2.5 | CO2 |
|---|---|---|---|---|---|---|---|
| Natural Gas | 0.25 | 3.49 | 2.93 | 0.00 | 0.01 | 0.01 | 4,184.80 |
| Hearth - No Summer Emissions | | | | | | | |
| Landscape | 0.25 | 0.04 | 3.09 | 0.00 | 0.01 | 0.01 | 5.62 |
| Consumer Products | 0.00 | | | | | | |
| Architectural Coatings | 2.59 | | | | | | |
| TOTALS (lbs/day, unmitigated) | 3.09 | 3.53 | 6.02 | 0.00 | 0.02 | 0.02 | 4,190.42 |

Area Source Changes to Defaults

Percentage of residences with wood stoves changed from 10% to 0%

Percentage of residences with wood fireplaces changed from 5% to 0%

Operational Unmitigated Detail Report:

OPERATIONAL EMISSION ESTIMATES Summer Pounds Per Day, Unmitigated

| Source | ROG | NOX | CO | SO2 | PM10 | PM25 | CO2 |
|---|---|---|---|---|---|---|---|
| Strip mall | 40.83 | 44.44 | 484.52 | 1.50 | 245.91 | 47.62 | 148,176.24 |
| Office park | 9.99 | 9.94 | 112.30 | 0.34 | 55.63 | 10.79 | 33,695.00 |
| TOTALS (lbs/day, unmitigated) | 50.82 | 54.38 | 596.82 | 1.84 | 301.54 | 58.41 | 181,871.24 |

Operational Settings:

Does not include correction for passby trips

**6/26/2009 7:51:32 AM**

Does not include double counting adjustment for internal trips

Analysis Year: 2030 Temperature (F): 80 Season: Summer

Emfac: Version : Emfac2007 V2.3 Nov 1 2006

Summary of Land Uses

| Land Use Type | Acreage | Trip Rate | Unit Type | No. Units | Total Trips | Total VMT |
|---|---|---|---|---|---|---|
| Strip mall | | 89.25 | 1000 sq ft | 178.00 | 15,886.50 | 142,549.56 |
| Office park | | 11.42 | 1000 sq ft | 265.00 | 3,026.30 | 32,236.15 |
| | | | | | 18,912.80 | 174,785.71 |

Vehicle Fleet Mix

| Vehicle Type | Percent Type | Non-Catalyst | Catalyst | Diesel |
|---|---|---|---|---|
| Light Auto | 49.4 | 0.0 | 100.0 | 0.0 |
| Light Truck < 3750 lbs | 7.3 | 0.0 | 100.0 | 0.0 |
| Light Truck 3751-5750 lbs | 23.9 | 0.0 | 100.0 | 0.0 |
| Med Truck 5751-8500 lbs | 11.4 | 0.0 | 100.0 | 0.0 |
| Lite-Heavy Truck 8501-10,000 lbs | 1.8 | 0.0 | 83.3 | 16.7 |
| Lite-Heavy Truck 10,001-14,000 lbs | 0.5 | 0.0 | 60.0 | 40.0 |
| Med-Heavy Truck 14,001-33,000 lbs | 1.0 | 0.0 | 20.0 | 80.0 |
| Heavy-Heavy Truck 33,001-60,000 lbs | 0.6 | 0.0 | 0.0 | 100.0 |
| Other Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Urban Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motorcycle | 2.7 | 33.3 | 66.7 | 0.0 |
| School Bus | 0.1 | 0.0 | 0.0 | 100.0 |
| Motor Home | 1.1 | 0.0 | 90.9 | 9.1 |

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Travel Conditions

| | Residential | | | Commercial | | |
|---|---|---|---|---|---|---|
| | Home-Work | Home-Shop | Home-Other | Commute | Non-Work | Customer |
| Urban Trip Length (miles) | 12.7 | 7.0 | 9.5 | 13.3 | 7.4 | 8.9 |
| Rural Trip Length (miles) | 17.6 | 12.1 | 14.9 | 15.4 | 9.6 | 12.6 |
| Trip speeds (mph) | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 | 30.0 |
| % of Trips - Residential | 32.9 | 18.0 | 49.1 | | | |
| | | | | | | |
| % of Trips - Commercial (by land use) | | | | | | |
| Strip mall | | | | 2.0 | 1.0 | 97.0 |
| Office park | | | | 48.0 | 24.0 | 28.0 |

# SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

## Background Information

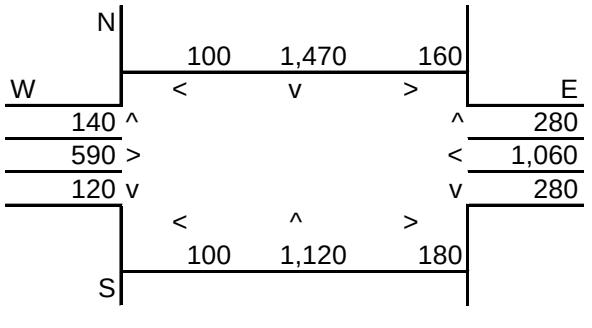
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

## Roadway Data

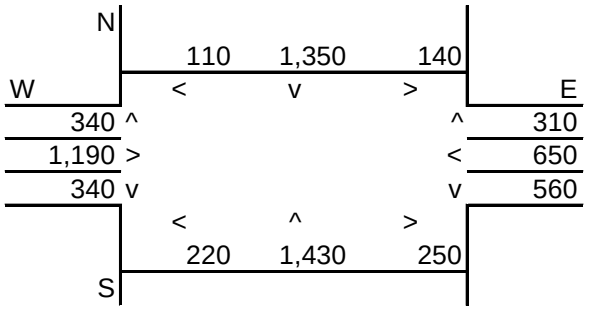
Intersection: Goldenwest St and Bolsa Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,270 | N-S Road: | 4,150 |
| E-W Road: | 2,550 | E-W Road: | 3,100 |

## Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,270 | 3.23 | 1.00 | 0.64 | 0.52 | 0.37 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,550 | 3.23 | 0.23 | 0.19 | 0.16 | 0.14 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,150 | 3.23 | 1.27 | 0.82 | 0.66 | 0.47 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,100 | 3.23 | 0.28 | 0.23 | 0.20 | 0.17 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

## Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.2 | 6.6 | 4.2 |
| 25 Feet from Roadway Edge | 5.8 | 6.0 | 3.8 |
| 50 Feet from Roadway Edge | 5.7 | 5.9 | 3.7 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

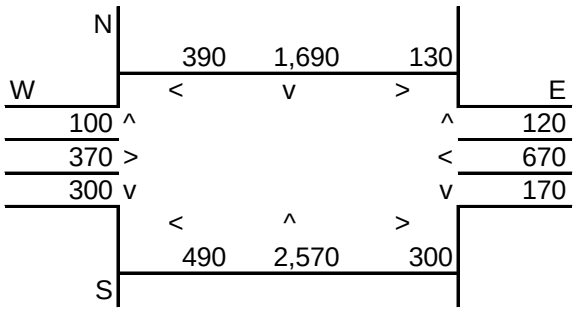
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

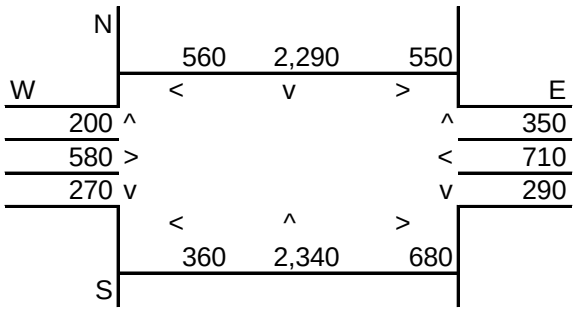
Intersection: Beach Blvd and Edinger Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Edinger Ave | At Grade | 8 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,520 | N-S Road: | 6,290 |
| E-W Road: | 2,320 | E-W Road: | 3,160 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,520 | 3.23 | 1.52 | 1.02 | 0.82 | 0.61 |
| East-West Road | 2.6 | 2.2 | 1.9 | 1.6 | 2,320 | 3.23 | 0.19 | 0.16 | 0.14 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,290 | 3.23 | 1.73 | 1.16 | 0.94 | 0.69 |
| East-West Road | 2.6 | 2.2 | 1.9 | 1.6 | 3,160 | 3.23 | 0.27 | 0.22 | 0.19 | 0.16 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.7 | 7.0 | 4.5 |
| 25 Feet from Roadway Edge | 6.2 | 6.4 | 4.1 |
| 50 Feet from Roadway Edge | 6.0 | 6.1 | 3.9 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

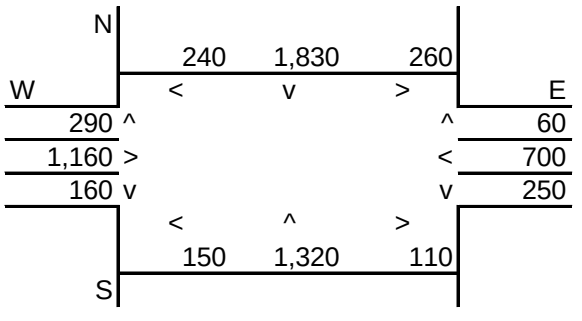
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

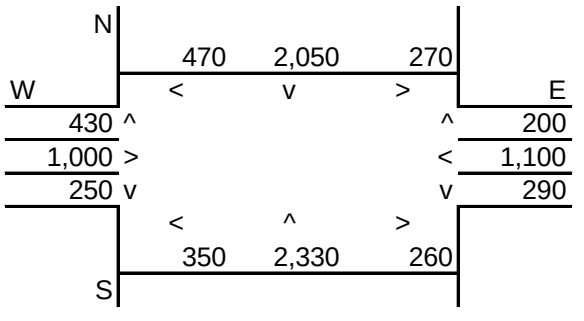
Intersection: Beach Blvd and Warner Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,000 | N-S Road: | 5,750 |
| E-W Road: | 2,700 | E-W Road: | 3,600 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,000 | 3.23 | 1.10 | 0.74 | 0.59 | 0.44 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,700 | 3.23 | 0.24 | 0.20 | 0.17 | 0.15 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,750 | 3.23 | 1.58 | 1.06 | 0.85 | 0.63 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,600 | 3.23 | 0.33 | 0.27 | 0.23 | 0.20 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.3 | 6.9 | 4.4 |
| 25 Feet from Roadway Edge | 5.9 | 6.3 | 4.0 |
| 50 Feet from Roadway Edge | 5.8 | 6.1 | 3.9 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

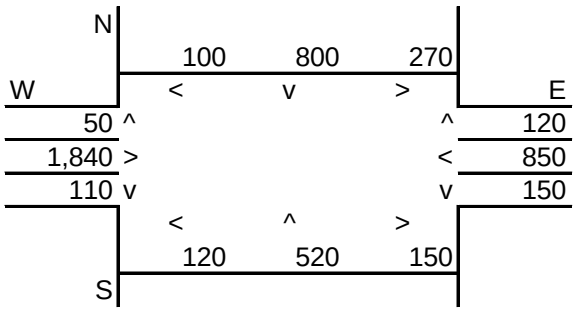
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

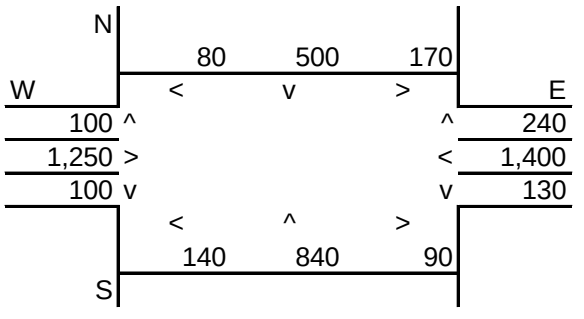
Intersection: Newland St and Warner Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,860 | N-S Road: | 1,930 |
| E-W Road: | 3,380 | E-W Road: | 3,280 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,860 | 3.23 | 0.20 | 0.16 | 0.13 | 0.10 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,380 | 3.23 | 1.04 | 0.67 | 0.54 | 0.38 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,930 | 3.23 | 0.21 | 0.16 | 0.14 | 0.11 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,280 | 3.23 | 1.01 | 0.65 | 0.52 | 0.37 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.2 | 6.2 | 4.0 |
| 25 Feet from Roadway Edge | 5.8 | 5.8 | 3.7 |
| 50 Feet from Roadway Edge | 5.7 | 5.7 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

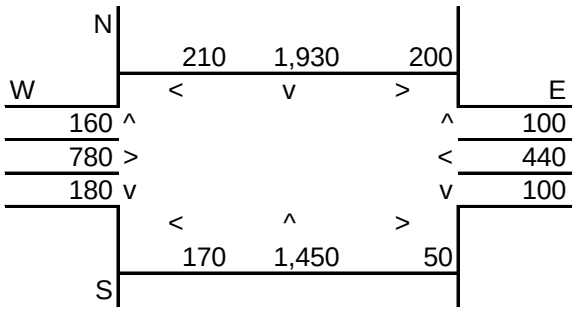
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

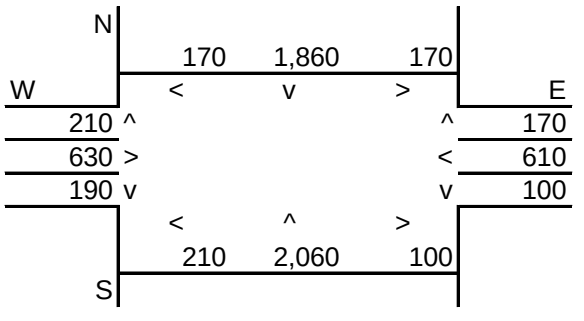
Intersection: Beach Blvd and Slater
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,050 | N-S Road: | 4,640 |
| E-W Road: | 1,940 | E-W Road: | 2,020 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,050 | 3.23 | 1.11 | 0.75 | 0.60 | 0.45 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,940 | 3.23 | 0.21 | 0.16 | 0.14 | 0.11 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,640 | 3.23 | 1.27 | 0.85 | 0.69 | 0.51 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,020 | 3.23 | 0.22 | 0.17 | 0.14 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.3 | 6.5 | 4.1 |
| 25 Feet from Roadway Edge | 5.9 | 6.0 | 3.8 |
| 50 Feet from Roadway Edge | 5.7 | 5.8 | 3.7 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

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### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

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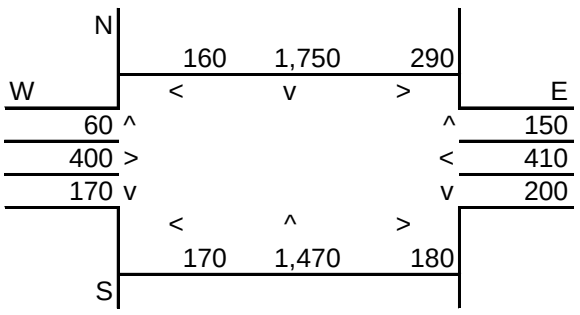
### Roadway Data

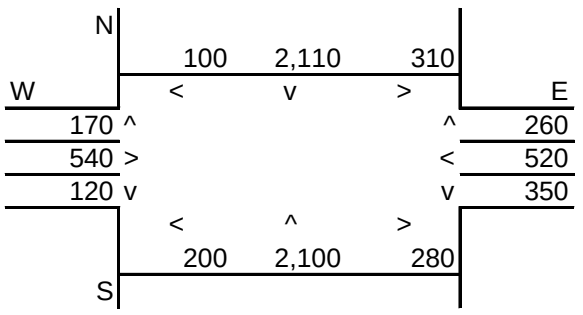
Intersection: Beach Blvd and Talbert
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,940 | N-S Road: | 5,160 |
| E-W Road: | 1,630 | E-W Road: | 2,260 |

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### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 3,940 | 3.23 | 1.08 | 0.73 | 0.59 | 0.43 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,630 | 3.23 | 0.15 | 0.12 | 0.11 | 0.09 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,160 | 3.23 | 1.42 | 0.95 | 0.77 | 0.57 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,260 | 3.23 | 0.20 | 0.17 | 0.15 | 0.12 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

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### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.2 | 6.6 | 4.2 |
| 25 Feet from Roadway Edge | 5.8 | 6.1 | 3.9 |
| 50 Feet from Roadway Edge | 5.7 | 5.9 | 3.7 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

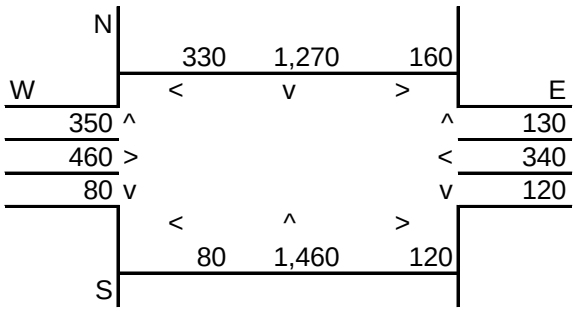
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

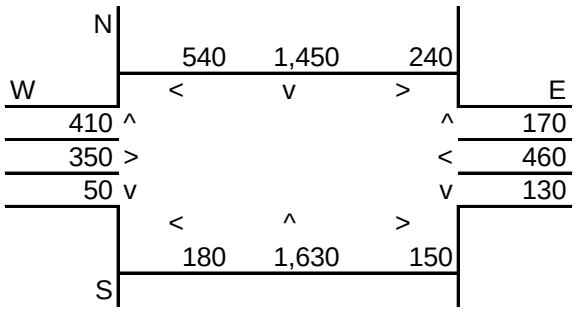
Intersection: Beach Blvd and Ellis Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Ellis Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,700 | N-S Road: | 4,440 |
| E-W Road: | 1,640 | E-W Road: | 1,990 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 3,700 | 3.23 | 1.02 | 0.68 | 0.55 | 0.41 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,640 | 3.23 | 0.17 | 0.14 | 0.12 | 0.09 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,440 | 3.23 | 1.22 | 0.82 | 0.66 | 0.49 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,990 | 3.23 | 0.21 | 0.17 | 0.14 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.2 | 6.4 | 4.1 |
| 25 Feet from Roadway Edge | 5.8 | 6.0 | 3.8 |
| 50 Feet from Roadway Edge | 5.7 | 5.8 | 3.7 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

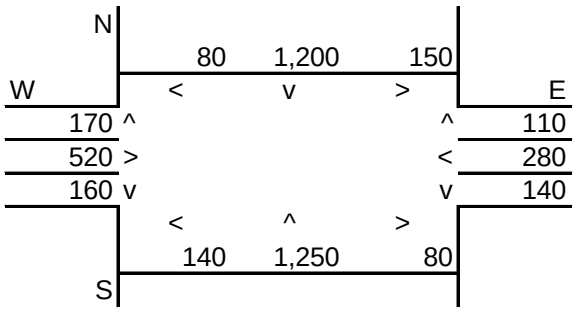
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

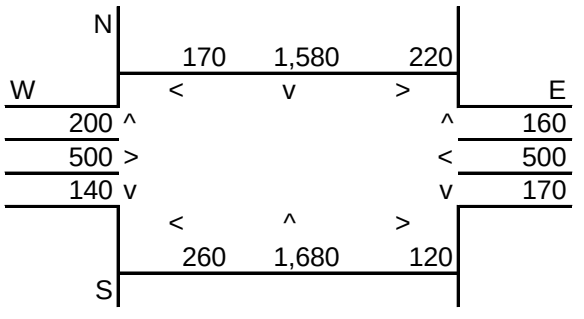
Intersection: Beach Blvd and Garfield Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,970 | N-S Road: | 4,010 |
| E-W Road: | 1,350 | E-W Road: | 1,770 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,970 | 3.23 | 0.91 | 0.59 | 0.47 | 0.34 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,350 | 3.23 | 0.14 | 0.11 | 0.10 | 0.07 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,010 | 3.23 | 1.23 | 0.79 | 0.64 | 0.45 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,770 | 3.23 | 0.19 | 0.15 | 0.13 | 0.10 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.1 | 6.4 | 4.1 |
| 25 Feet from Roadway Edge | 5.7 | 5.9 | 3.8 |
| 50 Feet from Roadway Edge | 5.6 | 5.8 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

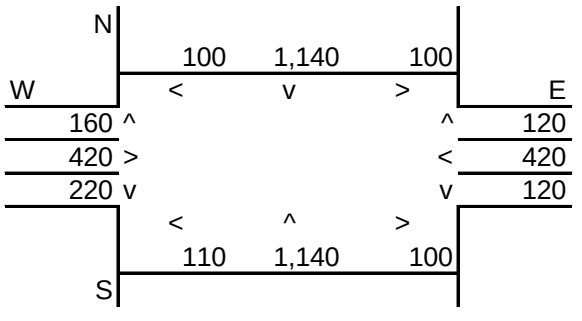
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

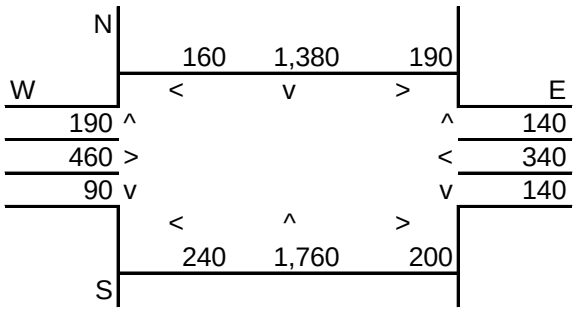
Intersection: Beach Blvd and Yorktown Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Yorktown Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,830 | N-S Road: | 3,820 |
| E-W Road: | 1,430 | E-W Road: | 1,480 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,830 | 3.23 | 0.87 | 0.56 | 0.45 | 0.32 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,430 | 3.23 | 0.15 | 0.12 | 0.10 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,820 | 3.23 | 1.17 | 0.75 | 0.60 | 0.43 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,480 | 3.23 | 0.16 | 0.12 | 0.11 | 0.08 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.0 | 6.3 | 4.0 |
| 25 Feet from Roadway Edge | 5.7 | 5.9 | 3.7 |
| 50 Feet from Roadway Edge | 5.5 | 5.7 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

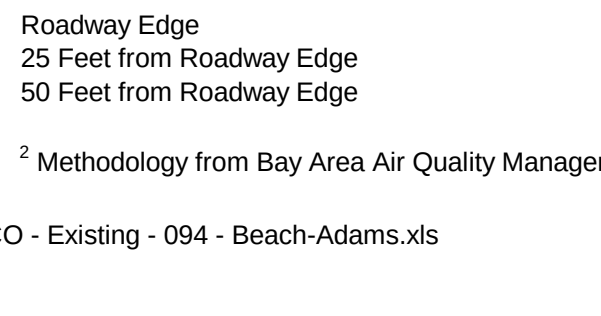
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

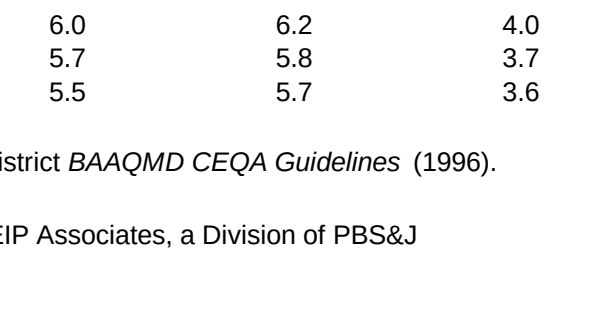
Intersection: Beach Blvd and Adams Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,580 | N-S Road: | 3,280 |
| E-W Road: | 2,170 | E-W Road: | 2,500 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,580 | 3.23 | 0.79 | 0.51 | 0.41 | 0.29 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,170 | 3.23 | 0.20 | 0.16 | 0.14 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,280 | 3.23 | 1.01 | 0.65 | 0.52 | 0.37 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,500 | 3.23 | 0.23 | 0.19 | 0.16 | 0.14 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.0 | 6.2 | 4.0 |
| 25 Feet from Roadway Edge | 5.7 | 5.8 | 3.7 |
| 50 Feet from Roadway Edge | 5.5 | 5.7 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

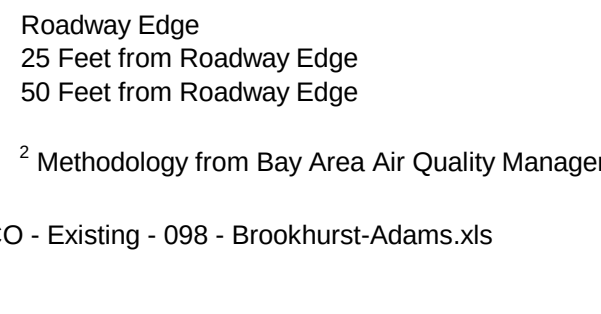
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

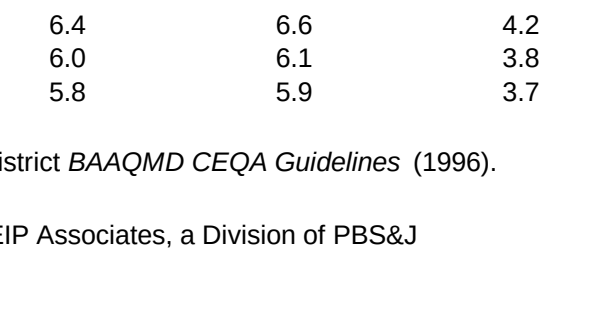
Intersection: Brookhurst St and Adams Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,650 | N-S Road: | 3,540 |
| E-W Road: | 3,890 | E-W Road: | 4,030 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,650 | 3.23 | 0.24 | 0.20 | 0.17 | 0.15 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,890 | 3.23 | 1.19 | 0.77 | 0.62 | 0.44 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,540 | 3.23 | 0.32 | 0.26 | 0.23 | 0.19 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,030 | 3.23 | 1.24 | 0.79 | 0.64 | 0.46 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.4 | 6.6 | 4.2 |
| 25 Feet from Roadway Edge | 6.0 | 6.1 | 3.8 |
| 50 Feet from Roadway Edge | 5.8 | 5.9 | 3.7 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

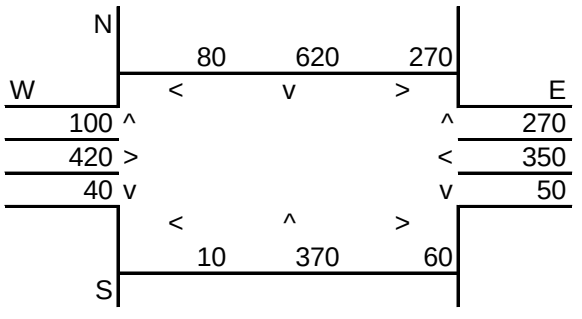
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

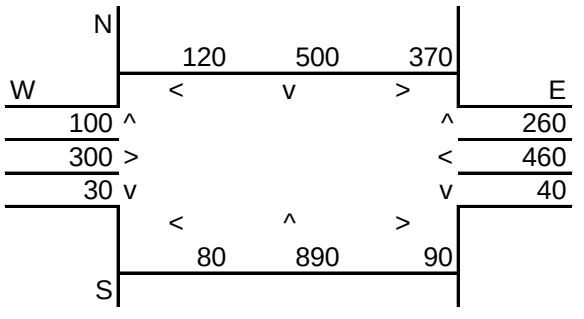
Intersection: Beach Blvd and Atlanta Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Atlanta Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,710 | N-S Road: | 2,240 |
| E-W Road: | 1,420 | E-W Road: | 1,520 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 1,710 | 3.23 | 0.53 | 0.34 | 0.27 | 0.19 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,420 | 3.23 | 0.15 | 0.12 | 0.10 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,240 | 3.23 | 0.69 | 0.44 | 0.35 | 0.25 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,520 | 3.23 | 0.16 | 0.13 | 0.11 | 0.08 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.7 | 5.8 | 3.7 |
| 25 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.5 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

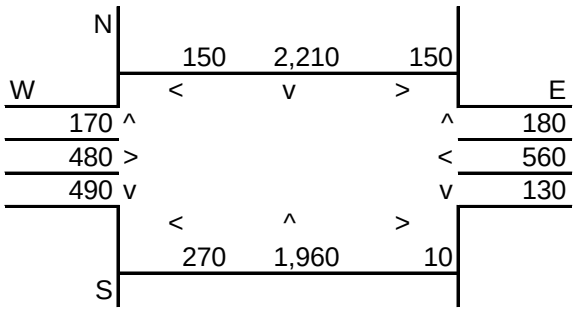
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

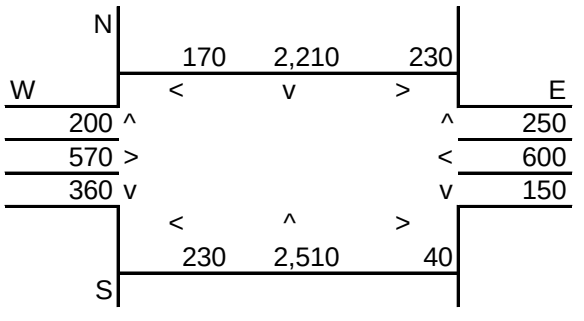
Intersection: Beach Blvd and Bolsa Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,070 | N-S Road: | 5,570 |
| E-W Road: | 2,120 | E-W Road: | 2,130 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,070 | 3.23 | 1.39 | 0.93 | 0.75 | 0.56 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,120 | 3.23 | 0.23 | 0.18 | 0.15 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,570 | 3.23 | 1.53 | 1.03 | 0.83 | 0.61 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,130 | 3.23 | 0.23 | 0.18 | 0.15 | 0.12 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.6 | 6.8 | 4.3 |
| 25 Feet from Roadway Edge | 6.1 | 6.2 | 3.9 |
| 50 Feet from Roadway Edge | 5.9 | 6.0 | 3.8 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

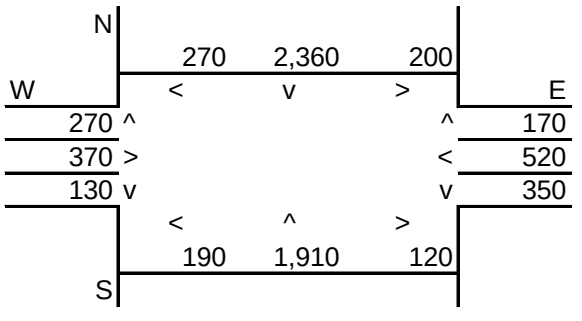
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2008 |

### Roadway Data

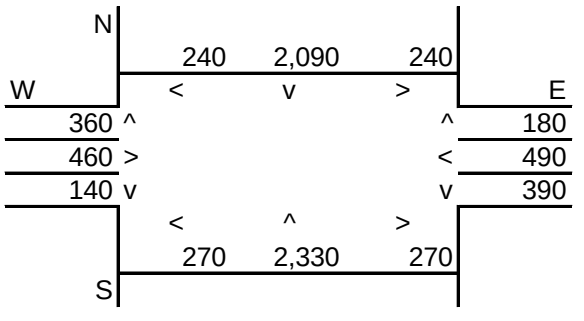
Intersection: Beach Blvd and McFadden Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | McFadden Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,180 | N-S Road: | 5,490 |
| E-W Road: | 1,750 | E-W Road: | 2,030 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,180 | 3.23 | 1.42 | 0.95 | 0.77 | 0.57 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,750 | 3.23 | 0.19 | 0.15 | 0.12 | 0.10 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,490 | 3.23 | 1.51 | 1.01 | 0.82 | 0.60 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,030 | 3.23 | 0.22 | 0.17 | 0.14 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.6 | 6.7 | 4.3 |
| 25 Feet from Roadway Edge | 6.1 | 6.2 | 3.9 |
| 50 Feet from Roadway Edge | 5.9 | 6.0 | 3.8 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: Goldenwest St and Bolsa Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 107 | 1,442 | 281 | |
| W | < | v | > | E |
| 190 | ^ | | ^ | 425 |
| 640 | > | | < | 1,210 |
| 123 | v | | v | 351 |
| | < | ^ | > | |
| | 152 | 1,304 | 252 | |
| | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 115 | 1,450 | 238 | |
| W | < | v | > | E |
| 368 | ^ | | ^ | 675 |
| 1,460 | > | | < | 764 |
| 365 | v | | v | 406 |
| | < | ^ | > | |
| | 214 | 1,480 | 256 | |
| | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,749 | N-S Road: | 4,326 |
| E-W Road: | 3,159 | E-W Road: | 3,799 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,749 | 1.94 | 0.69 | 0.44 | 0.36 | 0.25 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,159 | 1.94 | 0.17 | 0.14 | 0.12 | 0.10 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,326 | 1.94 | 0.80 | 0.51 | 0.41 | 0.29 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,799 | 1.94 | 0.21 | 0.17 | 0.15 | 0.13 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.9 | 6.0 | 3.8 |
| 25 Feet from Roadway Edge | 5.6 | 5.7 | 3.6 |
| 50 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: I-405 SB Ramps and Center Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | I-405 SB Ramps | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Center Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 170 | 0 | 792 | |
| W | < | v | > | E |
| 118 ^ | | | ^ | 411 |
| 209 > | | | < | 274 |
| 0 v | | | v | 0 |
| | < | ^ | > | |
| | 0 | 0 | 0 | |
| | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 250 | 0 | 982 | |
| W | < | v | > | E |
| 391 ^ | | | ^ | 658 |
| 222 > | | | < | 357 |
| 0 v | | | v | 0 |
| | < | ^ | > | |
| | 0 | 0 | 0 | |
| | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,491 | N-S Road: | 2,281 |
| E-W Road: | 1,686 | E-W Road: | 2,219 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,491 | 1.94 | 0.10 | 0.08 | 0.06 | 0.05 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,686 | 1.94 | 0.39 | 0.23 | 0.18 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,281 | 1.94 | 0.53 | 0.31 | 0.24 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,219 | 1.94 | 0.14 | 0.11 | 0.09 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.7 | 3.6 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

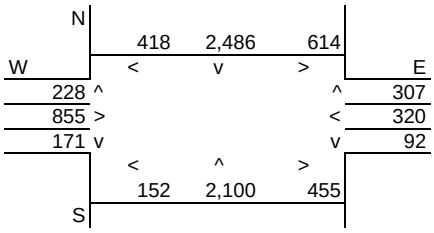
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

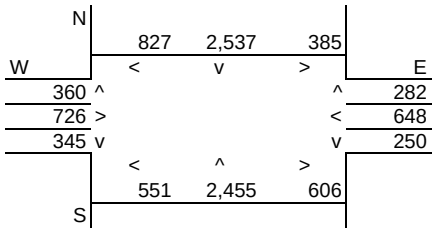
Intersection: Beach Blvd and Edinger Ave
Analysis Condition: Existing

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Edinger Ave | At Grade | 8 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 6,153 | N-S Road: | 6,846 |
| E-W Road: | 2,643 | E-W Road: | 3,457 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,153 | 1.94 | 1.02 | 0.68 | 0.55 | 0.41 |
| East-West Road | 2.6 | 2.2 | 1.9 | 1.6 | 2,643 | 1.94 | 0.13 | 0.11 | 0.10 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,846 | 1.94 | 1.13 | 0.76 | 0.61 | 0.45 |
| East-West Road | 2.6 | 2.2 | 1.9 | 1.6 | 3,457 | 1.94 | 0.17 | 0.15 | 0.13 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.1 | 6.3 | 4.0 |
| 25 Feet from Roadway Edge | 5.8 | 5.9 | 3.7 |
| 50 Feet from Roadway Edge | 5.6 | 5.7 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

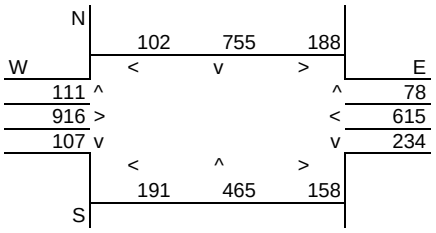
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

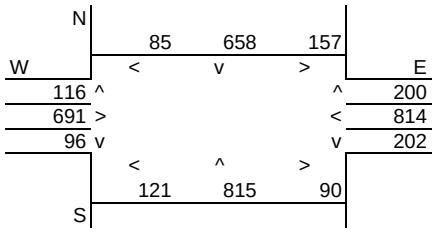
Intersection: Newland St and Edinger Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Edinger Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,910 | N-S Road: | 2,031 |
| E-W Road: | 2,189 | E-W Road: | 2,154 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,910 | 1.94 | 0.12 | 0.10 | 0.08 | 0.06 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,189 | 1.94 | 0.51 | 0.30 | 0.23 | 0.16 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,031 | 1.94 | 0.13 | 0.10 | 0.09 | 0.07 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,154 | 1.94 | 0.50 | 0.29 | 0.23 | 0.16 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.6 | 5.6 | 3.5 |
| 25 Feet from Roadway Edge | 5.4 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

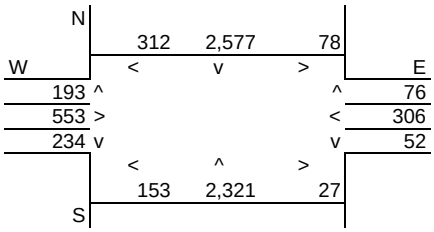
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

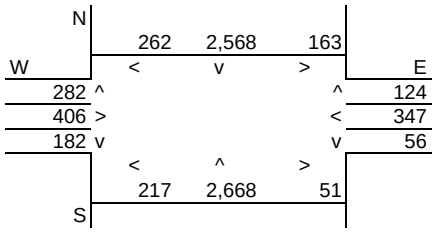
Intersection: Beach Blvd and Heil Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Heil Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,557 | N-S Road: | 6,067 |
| E-W Road: | 1,751 | E-W Road: | 1,696 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,557 | 1.94 | 0.92 | 0.62 | 0.50 | 0.37 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,751 | 1.94 | 0.11 | 0.09 | 0.07 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,067 | 1.94 | 1.00 | 0.67 | 0.54 | 0.40 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,696 | 1.94 | 0.11 | 0.09 | 0.07 | 0.06 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.0 | 6.1 | 3.9 |
| 25 Feet from Roadway Edge | 5.7 | 5.8 | 3.6 |
| 50 Feet from Roadway Edge | 5.6 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

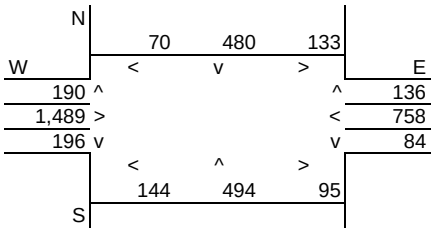
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

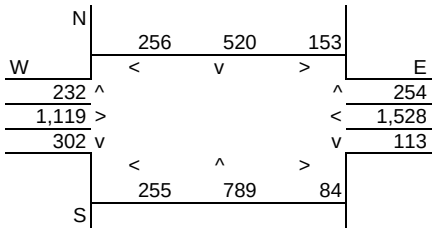
Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,503 | N-S Road: | 2,204 |
| E-W Road: | 2,847 | E-W Road: | 3,692 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,503 | 1.94 | 0.08 | 0.07 | 0.06 | 0.05 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,847 | 1.94 | 0.66 | 0.39 | 0.30 | 0.21 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,204 | 1.94 | 0.12 | 0.10 | 0.09 | 0.07 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,692 | 1.94 | 0.85 | 0.50 | 0.39 | 0.27 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.7 | 6.0 | 3.8 |
| 25 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.5 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: Beach Blvd and Warner Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | N | | | | |
| | 292 | 1,856 | 282 | | |
| W | < | v | > | E | |
| 332 | ^ | | ^ | 68 | |
| 1,232 | > | | < | 725 | |
| 151 | v | | v | 318 | |
| | < | ^ | > | | |
| | 190 | 1,450 | 192 | | |
| | S | | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | N | | | | |
| | 490 | 2,073 | 283 | | |
| W | < | v | > | E | |
| 446 | ^ | | ^ | 263 | |
| 1,084 | > | | < | 1,178 | |
| 271 | v | | v | 322 | |
| | < | ^ | > | | |
| | 355 | 2,417 | 266 | | |
| | S | | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,280 | N-S Road: | 5,972 |
| E-W Road: | 2,922 | E-W Road: | 3,824 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,280 | 1.94 | 0.71 | 0.47 | 0.38 | 0.28 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,922 | 1.94 | 0.16 | 0.13 | 0.11 | 0.10 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,972 | 1.94 | 0.99 | 0.66 | 0.53 | 0.39 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,824 | 1.94 | 0.21 | 0.17 | 0.15 | 0.13 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.9 | 6.2 | 3.9 |
| 25 Feet from Roadway Edge | 5.6 | 5.8 | 3.7 |
| 50 Feet from Roadway Edge | 5.5 | 5.7 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

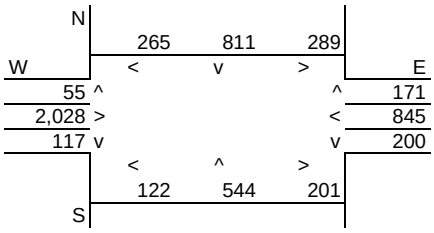
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

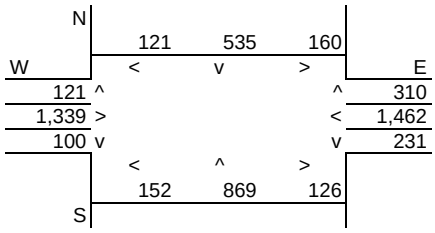
Intersection: Newland St and Warner Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,135 | N-S Road: | 2,116 |
| E-W Road: | 3,734 | E-W Road: | 3,628 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,135 | 1.94 | 0.14 | 0.11 | 0.09 | 0.07 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,734 | 1.94 | 0.69 | 0.44 | 0.36 | 0.25 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,116 | 1.94 | 0.14 | 0.11 | 0.09 | 0.07 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,628 | 1.94 | 0.67 | 0.43 | 0.35 | 0.25 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.8 | 5.8 | 3.7 |
| 25 Feet from Roadway Edge | 5.6 | 5.5 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

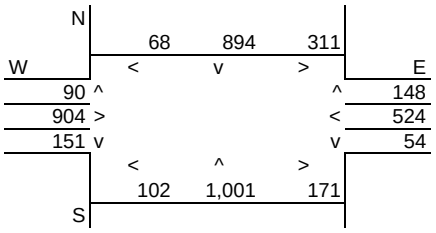
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

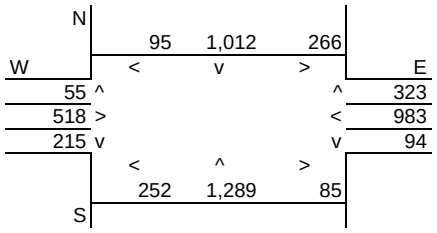
Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,512 | N-S Road: | 3,040 |
| E-W Road: | 2,112 | E-W Road: | 2,269 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,512 | 1.94 | 0.46 | 0.30 | 0.24 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,112 | 1.94 | 0.14 | 0.11 | 0.09 | 0.07 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,040 | 1.94 | 0.56 | 0.36 | 0.29 | 0.21 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,269 | 1.94 | 0.15 | 0.11 | 0.10 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.6 | 5.7 | 3.6 |
| 25 Feet from Roadway Edge | 5.4 | 5.5 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: Beach Blvd and Slater
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | N | | | | |
| | | 228 | 2,008 | 210 | |
| W | < | | v | > | E |
| 182 | ^ | | | ^ | 92 |
| 790 | > | | | < | 511 |
| 205 | v | | | v | 136 |
| | < | | ^ | > | |
| | | 170 | 1,570 | 60 | |
| | S | | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | N | | | | |
| | | 194 | 1,870 | 188 | |
| W | < | | v | > | E |
| 217 | ^ | | | ^ | 170 |
| 676 | > | | | < | 599 |
| 205 | v | | | v | 207 |
| | < | | ^ | > | |
| | | 210 | 2,144 | 106 | |
| | S | | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | A.M. | P.M. |
|---|---|---|
| N-S Road: | 4,290 | 4,783 |
| E-W Road: | 2,086 | 2,101 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,290 | 1.94 | 0.71 | 0.48 | 0.38 | 0.28 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,086 | 1.94 | 0.13 | 0.11 | 0.09 | 0.07 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,783 | 1.94 | 0.79 | 0.53 | 0.43 | 0.32 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,101 | 1.94 | 0.13 | 0.11 | 0.09 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.8 | 5.9 | 3.7 |
| 25 Feet from Roadway Edge | 5.6 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.5 | 5.5 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

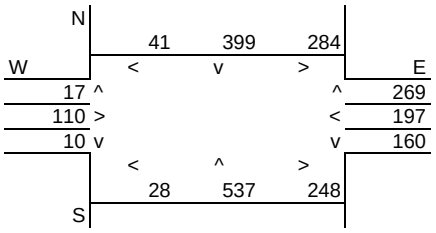
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

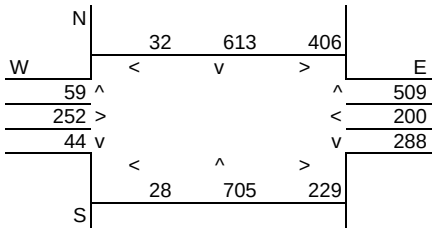
Intersection: Gothard St and Talbert Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Gothard St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,547 | N-S Road: | 2,324 |
| E-W Road: | 1,268 | E-W Road: | 1,884 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,547 | 1.94 | 0.36 | 0.21 | 0.16 | 0.11 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,268 | 1.94 | 0.08 | 0.06 | 0.05 | 0.04 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,324 | 1.94 | 0.54 | 0.32 | 0.24 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,884 | 1.94 | 0.12 | 0.10 | 0.08 | 0.06 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.7 | 3.6 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

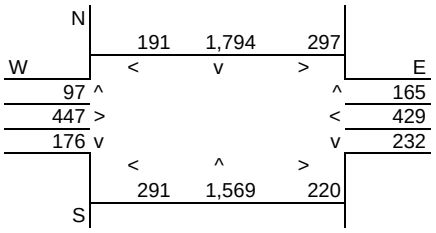
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

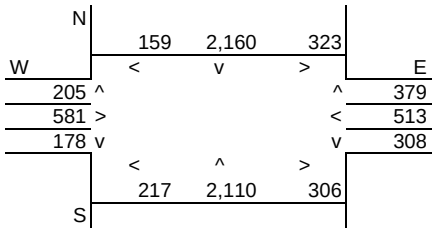
Intersection: Beach Blvd and Talbert
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,282 | N-S Road: | 5,336 |
| E-W Road: | 1,790 | E-W Road: | 2,410 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,282 | 1.94 | 0.71 | 0.47 | 0.38 | 0.28 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,790 | 1.94 | 0.10 | 0.08 | 0.07 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,336 | 1.94 | 0.88 | 0.59 | 0.48 | 0.35 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,410 | 1.94 | 0.13 | 0.11 | 0.09 | 0.08 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.8 | 6.0 | 3.8 |
| 25 Feet from Roadway Edge | 5.6 | 5.7 | 3.6 |
| 50 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

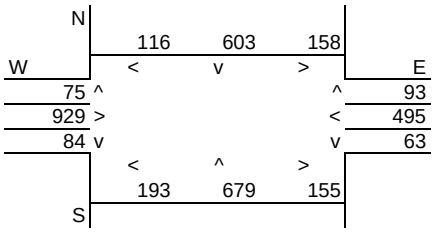
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

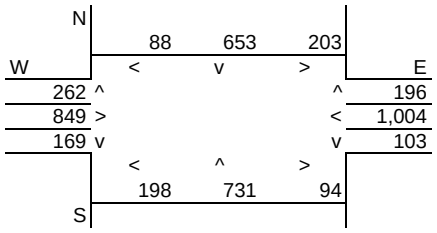
Intersection: Newland St and Talbert Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,777 | N-S Road: | 2,133 |
| E-W Road: | 1,893 | E-W Road: | 2,570 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,777 | 1.94 | 0.11 | 0.09 | 0.08 | 0.06 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,893 | 1.94 | 0.44 | 0.26 | 0.20 | 0.14 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,133 | 1.94 | 0.14 | 0.11 | 0.09 | 0.07 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,570 | 1.94 | 0.59 | 0.35 | 0.27 | 0.19 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.6 | 5.7 | 3.6 |
| 25 Feet from Roadway Edge | 5.3 | 5.5 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

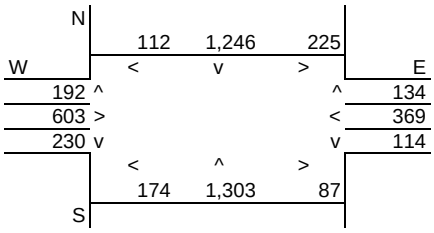
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

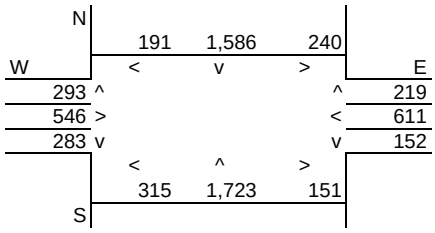
Intersection: Beach Blvd and Garfield Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,212 | N-S Road: | 4,252 |
| E-W Road: | 1,680 | E-W Road: | 2,239 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,212 | 1.94 | 0.59 | 0.38 | 0.31 | 0.22 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,680 | 1.94 | 0.11 | 0.08 | 0.07 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,252 | 1.94 | 0.78 | 0.50 | 0.40 | 0.29 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,239 | 1.94 | 0.14 | 0.11 | 0.10 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.7 | 5.9 | 3.7 |
| 25 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.5 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: Brookhurst St and Garfield Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | N | | | | |
| | | 86 | 876 | 48 | |
| W | < | | v | > | E |
| 425 | ^ | | | ^ | 118 |
| 590 | > | | | < | 261 |
| 166 | v | | | v | 122 |
| | < | | ^ | > | |
| | | 90 | 1,241 | 123 | |
| | S | | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | N | | | | |
| | | 416 | 1,472 | 78 | |
| W | < | | v | > | E |
| 323 | ^ | | | ^ | 124 |
| 362 | > | | | < | 468 |
| 205 | v | | | v | 192 |
| | < | | ^ | > | |
| | | 240 | 1,693 | 89 | |
| | S | | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,794 | N-S Road: | 4,106 |
| E-W Road: | 1,618 | E-W Road: | 2,014 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,794 | 1.94 | 0.52 | 0.33 | 0.27 | 0.19 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,618 | 1.94 | 0.10 | 0.08 | 0.07 | 0.05 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,106 | 1.94 | 0.76 | 0.49 | 0.39 | 0.28 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,014 | 1.94 | 0.13 | 0.10 | 0.09 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.6 | 5.9 | 3.7 |
| 25 Feet from Roadway Edge | 5.4 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.3 | 5.5 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

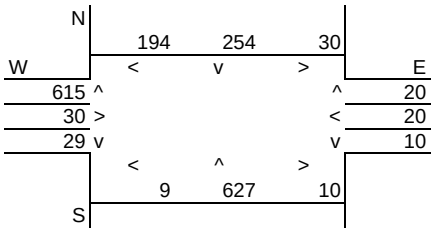
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

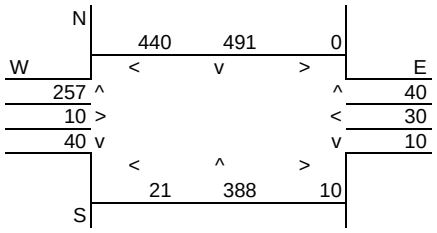
Intersection: Ward St and Garfield Ave
Analysis Condition: 2016

| | | | No. of | Average Speed | |
|---|---|---|---|---|---|
| | | Roadway Type | Lanes | A.M. | P.M. |
| North-South Roadway: | Ward St | At Grade | 2 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,740 | N-S Road: | 1,616 |
| E-W Road: | 897 | E-W Road: | 798 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 14.0 | 7.6 | 5.7 | 4.0 | 1,740 | 1.94 | 0.47 | 0.26 | 0.19 | 0.14 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 897 | 1.94 | 0.06 | 0.05 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 14.0 | 7.6 | 5.7 | 4.0 | 1,616 | 1.94 | 0.44 | 0.24 | 0.18 | 0.13 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 798 | 1.94 | 0.05 | 0.04 | 0.03 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.5 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

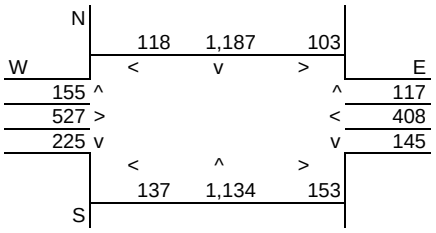
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

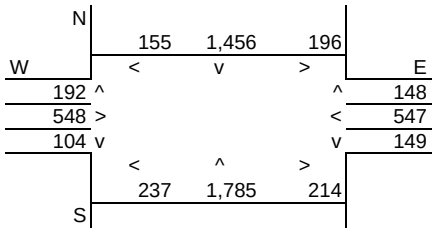
Intersection: Beach Blvd and Yorktown Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Yorktown Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,981 | N-S Road: | 3,945 |
| E-W Road: | 1,570 | E-W Road: | 1,802 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,981 | 1.94 | 0.55 | 0.35 | 0.28 | 0.20 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,570 | 1.94 | 0.10 | 0.08 | 0.07 | 0.05 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,945 | 1.94 | 0.73 | 0.47 | 0.38 | 0.27 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,802 | 1.94 | 0.12 | 0.09 | 0.08 | 0.06 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.7 | 5.8 | 3.7 |
| 25 Feet from Roadway Edge | 5.4 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.5 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

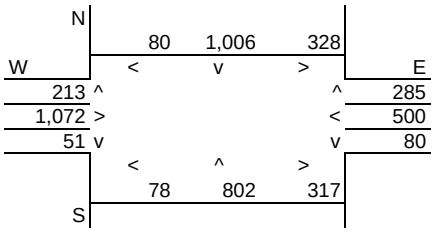
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

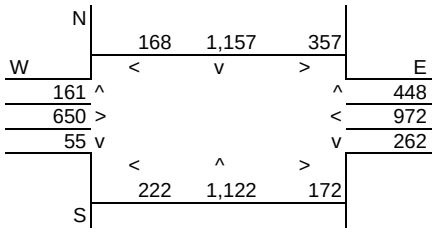
Intersection: Beach Blvd and Adams Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,714 | N-S Road: | 3,413 |
| E-W Road: | 2,582 | E-W Road: | 2,861 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,714 | 1.94 | 0.50 | 0.32 | 0.26 | 0.18 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,582 | 1.94 | 0.14 | 0.12 | 0.10 | 0.09 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,413 | 1.94 | 0.63 | 0.40 | 0.32 | 0.23 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,861 | 1.94 | 0.16 | 0.13 | 0.11 | 0.09 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.6 | 5.8 | 3.6 |
| 25 Feet from Roadway Edge | 5.4 | 5.5 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

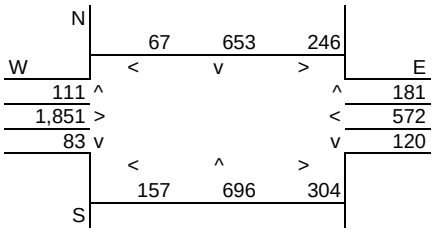
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

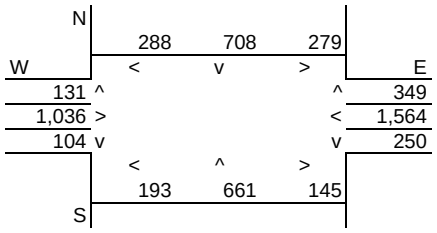
Intersection: Magnolia Ave and Adams Ave
Analysis Condition: 2016

| | | | No. of | Average Speed | |
|---|---|---|---|---|---|
| | | Roadway Type | Lanes | A.M. | P.M. |
| North-South Roadway: | Magnolia Ave | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,013 | N-S Road: | 2,416 |
| E-W Road: | 3,274 | E-W Road: | 3,623 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,013 | 1.94 | 0.13 | 0.10 | 0.09 | 0.07 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,274 | 1.94 | 0.60 | 0.39 | 0.31 | 0.22 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,416 | 1.94 | 0.15 | 0.12 | 0.10 | 0.08 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,623 | 1.94 | 0.67 | 0.43 | 0.34 | 0.25 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.7 | 5.8 | 3.7 |
| 25 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |
| 50 Feet from Roadway Edge | 5.4 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

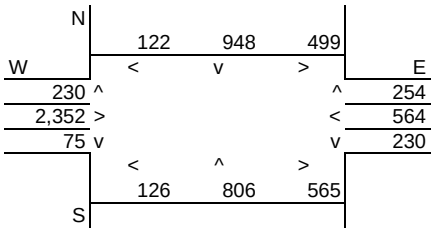
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

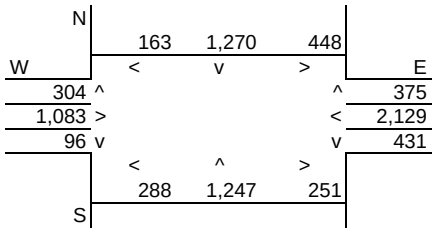
Intersection: Brookhurst St and Adams Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,859 | N-S Road: | 3,807 |
| E-W Road: | 4,464 | E-W Road: | 4,717 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,859 | 1.94 | 0.16 | 0.13 | 0.11 | 0.09 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,464 | 1.94 | 0.82 | 0.53 | 0.43 | 0.30 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,807 | 1.94 | 0.21 | 0.17 | 0.15 | 0.13 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,717 | 1.94 | 0.87 | 0.56 | 0.45 | 0.32 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.0 | 6.1 | 3.9 |
| 25 Feet from Roadway Edge | 5.7 | 5.7 | 3.6 |
| 50 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

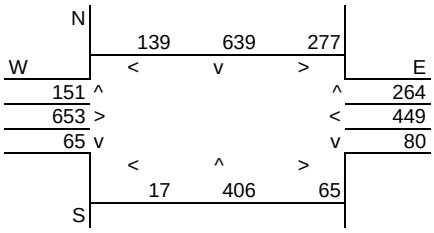
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

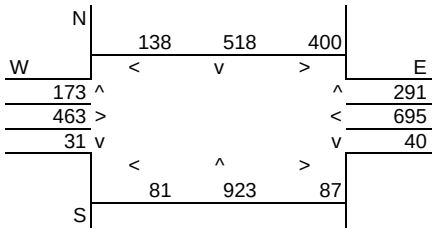
Intersection: Beach Blvd and Atlanta Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Atlanta Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,876 | N-S Road: | 2,443 |
| E-W Road: | 1,788 | E-W Road: | 1,976 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 1,876 | 1.94 | 0.35 | 0.22 | 0.18 | 0.13 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,788 | 1.94 | 0.11 | 0.09 | 0.08 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,443 | 1.94 | 0.45 | 0.29 | 0.23 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,976 | 1.94 | 0.13 | 0.10 | 0.08 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.6 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

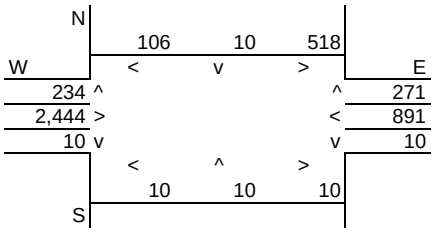
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

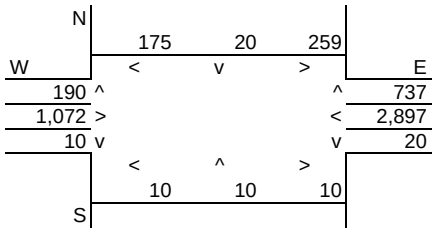
Intersection: Brookhurst St and PCH
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | PCH | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,149 | N-S Road: | 1,391 |
| E-W Road: | 4,144 | E-W Road: | 4,995 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,149 | 1.94 | 0.06 | 0.05 | 0.04 | 0.04 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,144 | 1.94 | 0.76 | 0.49 | 0.39 | 0.28 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,391 | 1.94 | 0.08 | 0.06 | 0.05 | 0.05 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,995 | 1.94 | 0.92 | 0.59 | 0.48 | 0.34 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.8 | 6.0 | 3.8 |
| 25 Feet from Roadway Edge | 5.5 | 5.7 | 3.6 |
| 50 Feet from Roadway Edge | 5.4 | 5.5 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

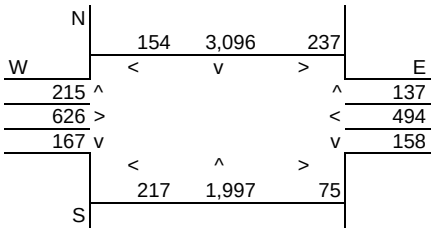
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

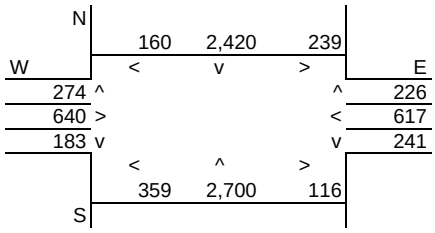
Intersection: Beach Blvd and Westminster Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Westminster Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,836 | N-S Road: | 6,019 |
| E-W Road: | 1,873 | E-W Road: | 2,233 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,836 | 1.94 | 0.96 | 0.65 | 0.52 | 0.39 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,873 | 1.94 | 0.10 | 0.08 | 0.07 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,019 | 1.94 | 0.99 | 0.67 | 0.54 | 0.40 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,233 | 1.94 | 0.12 | 0.10 | 0.09 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.1 | 6.1 | 3.9 |
| 25 Feet from Roadway Edge | 5.7 | 5.8 | 3.6 |
| 50 Feet from Roadway Edge | 5.6 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: Beach Blvd and Bolsa Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 272 | 2,396 | 158 | |
| W | < | v | > | E |
| 208 | ^ | | ^ | 199 |
| 605 | > | | < | 595 |
| 508 | v | | v | 165 |
| | < | ^ | > | |
| | 339 | 2,267 | 24 | |
| | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 252 | 2,471 | 241 | |
| W | < | v | > | E |
| 361 | ^ | | ^ | 284 |
| 618 | > | | < | 758 |
| 402 | v | | v | 172 |
| | < | ^ | > | |
| | 268 | 2,727 | 50 | |
| | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,699 | N-S Road: | 6,336 |
| E-W Road: | 2,527 | E-W Road: | 2,659 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,699 | 1.94 | 0.94 | 0.63 | 0.51 | 0.38 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,527 | 1.94 | 0.16 | 0.13 | 0.11 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,336 | 1.94 | 1.05 | 0.70 | 0.57 | 0.42 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,659 | 1.94 | 0.17 | 0.13 | 0.11 | 0.09 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.1 | 6.2 | 4.0 |
| 25 Feet from Roadway Edge | 5.8 | 5.8 | 3.7 |
| 50 Feet from Roadway Edge | 5.6 | 5.7 | 3.6 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

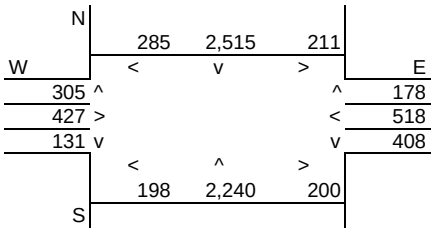
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

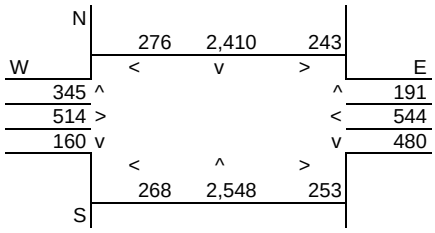
Intersection: Beach Blvd and McFadden Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | McFadden Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,734 | N-S Road: | 6,119 |
| E-W Road: | 1,942 | E-W Road: | 2,225 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,734 | 1.94 | 0.95 | 0.64 | 0.51 | 0.38 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,942 | 1.94 | 0.12 | 0.10 | 0.08 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,119 | 1.94 | 1.01 | 0.68 | 0.55 | 0.40 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,225 | 1.94 | 0.14 | 0.11 | 0.10 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.1 | 6.2 | 3.9 |
| 25 Feet from Roadway Edge | 5.7 | 5.8 | 3.7 |
| 50 Feet from Roadway Edge | 5.6 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

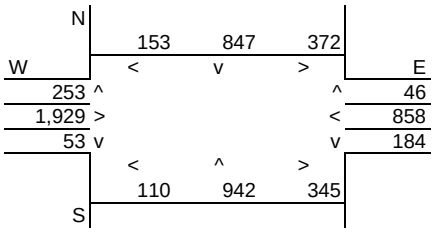
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

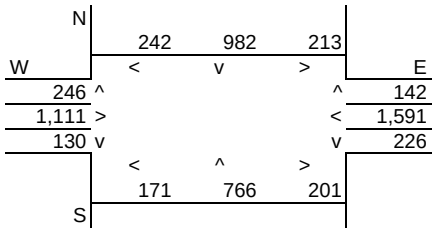
Intersection: Magnolia St and Warner Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Magnolia St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,613 | N-S Road: | 2,591 |
| E-W Road: | 3,734 | E-W Road: | 3,491 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,613 | 1.94 | 0.17 | 0.13 | 0.11 | 0.09 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,734 | 1.94 | 0.69 | 0.44 | 0.36 | 0.25 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,591 | 1.94 | 0.17 | 0.13 | 0.11 | 0.09 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,491 | 1.94 | 0.64 | 0.41 | 0.33 | 0.24 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.9 | 5.8 | 3.7 |
| 25 Feet from Roadway Edge | 5.6 | 5.5 | 3.5 |
| 50 Feet from Roadway Edge | 5.5 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

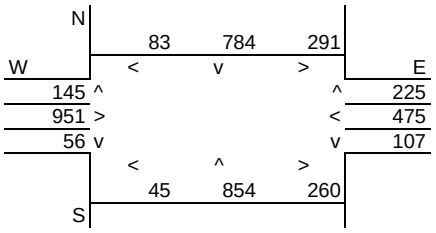
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

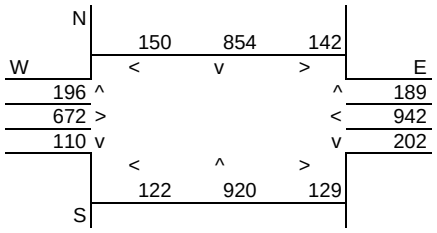
Intersection: Magnolia St and Talbert Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Magnolia St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,382 | N-S Road: | 2,451 |
| E-W Road: | 2,309 | E-W Road: | 2,276 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,382 | 1.94 | 0.55 | 0.32 | 0.25 | 0.18 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,309 | 1.94 | 0.15 | 0.12 | 0.10 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,451 | 1.94 | 0.57 | 0.33 | 0.26 | 0.18 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,276 | 1.94 | 0.15 | 0.11 | 0.10 | 0.08 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.7 | 5.7 | 3.6 |
| 25 Feet from Roadway Edge | 5.4 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.4 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

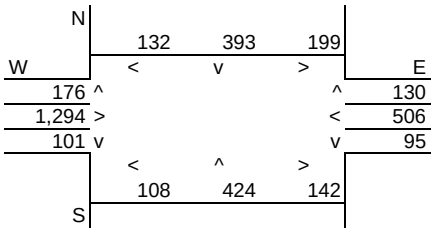
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

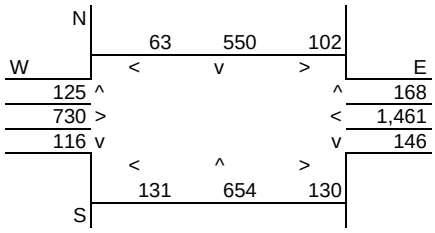
Intersection: Bushard St and Talbert Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Bushard St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,454 | N-S Road: | 1,727 |
| E-W Road: | 2,366 | E-W Road: | 2,737 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,454 | 1.94 | 0.09 | 0.07 | 0.06 | 0.05 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,366 | 1.94 | 0.55 | 0.32 | 0.25 | 0.17 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,727 | 1.94 | 0.11 | 0.09 | 0.07 | 0.06 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,737 | 1.94 | 0.63 | 0.37 | 0.29 | 0.20 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.6 | 5.7 | 3.6 |
| 25 Feet from Roadway Edge | 5.4 | 5.5 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2016 |

### Roadway Data

Intersection: Brookhurst St and Talbert Ave
Analysis Condition: 2016

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 450 | 679 | 748 | |
| W | < | | v | > | E |
| 207 | ^ | | | ^ | 139 |
| 1,408 | > | | | < | 468 |
| 10 | v | | | v | 233 |
| | < | | ^ | > | |
| | | 114 | 1,173 | 530 | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 374 | 1,474 | 375 | |
| W | < | | v | > | E |
| 326 | ^ | | | ^ | 444 |
| 889 | > | | | < | 1,147 |
| 172 | v | | | v | 749 |
| | < | | ^ | > | |
| | | 140 | 1,295 | 451 | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,396 | N-S Road: | 4,288 |
| E-W Road: | 3,526 | E-W Road: | 4,055 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,396 | 1.94 | 0.18 | 0.15 | 0.13 | 0.11 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,526 | 1.94 | 0.82 | 0.48 | 0.37 | 0.26 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,288 | 1.94 | 0.79 | 0.51 | 0.41 | 0.29 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 4,055 | 1.94 | 0.26 | 0.20 | 0.17 | 0.13 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 6.0 | 6.1 | 3.8 |
| 25 Feet from Roadway Edge | 5.6 | 5.7 | 3.6 |
| 50 Feet from Roadway Edge | 5.5 | 5.6 | 3.5 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Springdale St and Bolsa Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Springdale St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 170 | 1,400 | 240 | |
| W | < | | v | > | E |
| 50 | ^ | | | ^ | 230 |
| 270 | > | | | < | 900 |
| 40 | v | | | v | 350 |
| | < | | ^ | > | |
| | | 150 | 820 | 120 | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 50 | 950 | 190 | |
| W | < | | v | > | E |
| 170 | ^ | | | ^ | 170 |
| 1,290 | > | | | < | 510 |
| 110 | v | | | v | 270 |
| | < | | ^ | > | |
| | | 50 | 810 | 180 | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,910 | N-S Road: | 2,370 |
| E-W Road: | 2,110 | E-W Road: | 2,610 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,910 | 0.84 | 0.23 | 0.15 | 0.12 | 0.09 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,110 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,370 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,610 | 0.84 | 0.26 | 0.15 | 0.12 | 0.08 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Goldenwest St and Bolsa Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 140 | 1,440 | 360 | | |
| W | < | v | > | E | |
| 220 | ^ | | ^ | 460 | |
| 660 | > | | < | 1,330 | |
| 130 | v | | v | 390 | |
| | < | ^ | > | | |
| | 110 | 1,370 | 290 | | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 120 | 1,480 | 300 | | |
| W | < | v | > | E | |
| 390 | ^ | | ^ | 150 | |
| 1,620 | > | | < | 830 | |
| 340 | v | | v | 450 | |
| | < | ^ | > | | |
| | 220 | 1,520 | 260 | | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,990 | N-S Road: | 4,270 |
| E-W Road: | 3,490 | E-W Road: | 3,610 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,990 | 0.84 | 0.32 | 0.20 | 0.16 | 0.12 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,490 | 0.84 | 0.08 | 0.07 | 0.06 | 0.05 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,270 | 0.84 | 0.34 | 0.22 | 0.18 | 0.13 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,610 | 0.84 | 0.08 | 0.07 | 0.06 | 0.05 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

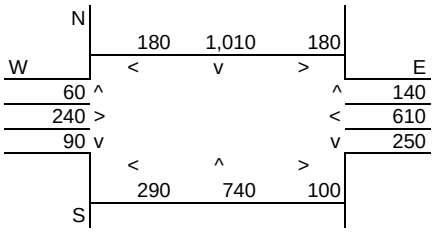
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

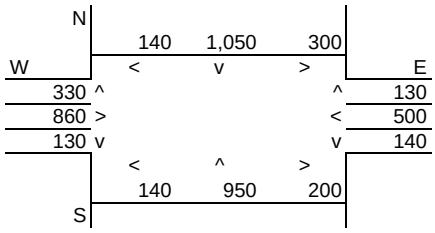
Intersection: Springdale St and McFadden Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Springdale St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | McFadden Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,480 | N-S Road: | 2,900 |
| E-W Road: | 1,520 | E-W Road: | 2,130 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,480 | 0.84 | 0.20 | 0.13 | 0.10 | 0.07 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,520 | 0.84 | 0.04 | 0.03 | 0.03 | 0.02 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,900 | 0.84 | 0.23 | 0.15 | 0.12 | 0.09 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,130 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.2 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

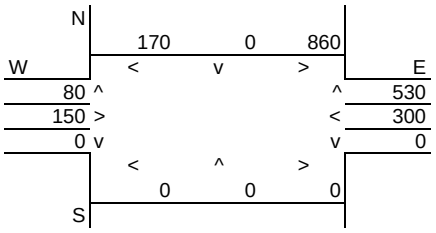
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

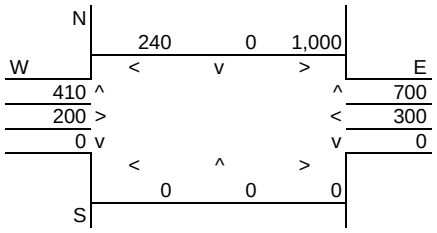
Intersection: I-405 SB Ramps and Center Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | I-405 SB Ramps | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Center Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,640 | N-S Road: | 2,350 |
| E-W Road: | 1,840 | E-W Road: | 2,200 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,640 | 0.84 | 0.05 | 0.04 | 0.03 | 0.02 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,840 | 0.84 | 0.18 | 0.11 | 0.08 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,350 | 0.84 | 0.23 | 0.14 | 0.11 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,200 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.2 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.1 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Edinger Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Edinger Ave | At Grade | 8 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 440 | 2,570 | 690 | | |
| W | < | v | > | E | |
| 180 | ^ | | ^ | 300 | |
| 920 | > | | < | 370 | |
| 140 | v | | v | 100 | |
| | < | ^ | > | | |
| | 140 | 2,300 | 430 | | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 910 | 2,630 | 390 | | |
| W | < | v | > | E | |
| 360 | ^ | | ^ | 290 | |
| 770 | > | | < | 670 | |
| 320 | v | | v | 280 | |
| | < | ^ | > | | |
| | 560 | 2,590 | 640 | | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | A.M. | P.M. |
|---|---|---|
| N-S Road: | 6,480 | 7,170 |
| E-W Road: | 2,810 | 3,590 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,480 | 0.84 | 0.46 | 0.31 | 0.25 | 0.19 |
| East-West Road | 2.6 | 2.2 | 1.9 | 1.6 | 2,810 | 0.84 | 0.06 | 0.05 | 0.04 | 0.04 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 7,170 | 0.84 | 0.51 | 0.34 | 0.28 | 0.20 |
| East-West Road | 2.6 | 2.2 | 1.9 | 1.6 | 3,590 | 0.84 | 0.08 | 0.07 | 0.06 | 0.05 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.6 | 3.5 |
| 25 Feet from Roadway Edge | 5.4 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

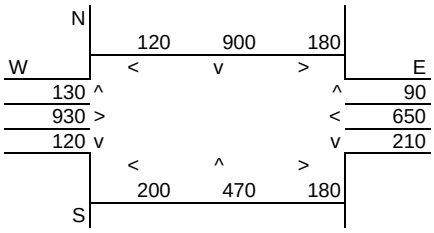
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

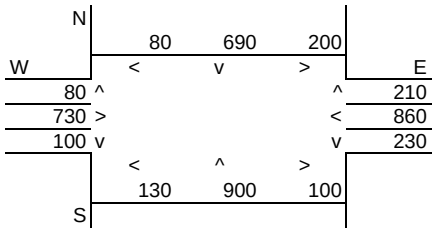
Intersection: Newland St and Edinger Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Edinger Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,080 | N-S Road: | 2,160 |
| E-W Road: | 2,240 | E-W Road: | 2,330 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,080 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,240 | 0.84 | 0.22 | 0.13 | 0.10 | 0.07 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,160 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,330 | 0.84 | 0.23 | 0.14 | 0.11 | 0.07 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

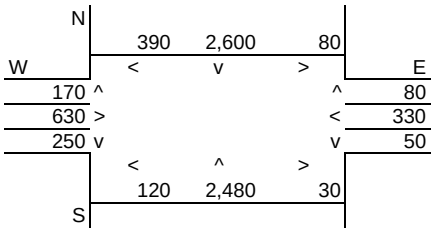
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

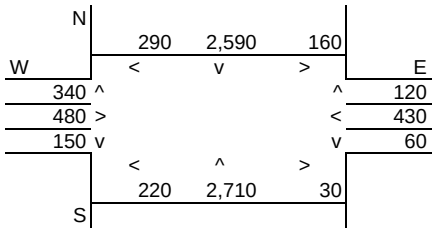
Intersection: Beach Blvd and Heil Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Heil Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,800 | N-S Road: | 6,210 |
| E-W Road: | 1,890 | E-W Road: | 1,910 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,800 | 0.84 | 0.41 | 0.28 | 0.22 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,890 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,210 | 0.84 | 0.44 | 0.30 | 0.24 | 0.18 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,910 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.5 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

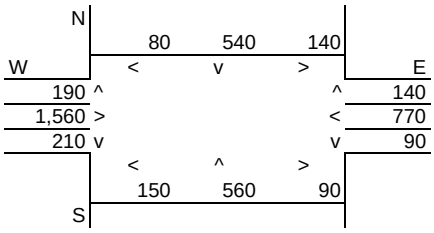
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

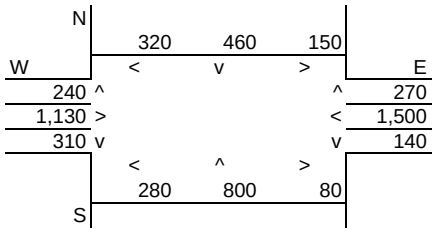
Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,650 | N-S Road: | 2,240 |
| E-W Road: | 2,960 | E-W Road: | 3,780 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,650 | 0.84 | 0.04 | 0.03 | 0.03 | 0.02 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,960 | 0.84 | 0.30 | 0.17 | 0.13 | 0.09 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,240 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,780 | 0.84 | 0.38 | 0.22 | 0.17 | 0.12 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Warner Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 330 | 1,830 | 290 | |
| W | < | v | > | | E |
| 350 | ^ | | | ^ | 50 |
| 1,240 | > | | | < | 740 |
| 150 | v | | | v | 360 |
| | < | ^ | > | | |
| | 210 | 1,530 | 230 | | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 470 | 2,080 | 260 | |
| W | < | v | > | | E |
| 430 | ^ | | | ^ | 320 |
| 1,130 | > | | | < | 1,200 |
| 270 | v | | | v | 290 |
| | < | ^ | > | | |
| | 350 | 2,470 | 240 | | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,380 | N-S Road: | 6,030 |
| E-W Road: | 3,020 | E-W Road: | 3,850 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,380 | 0.84 | 0.31 | 0.21 | 0.17 | 0.13 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,020 | 0.84 | 0.07 | 0.06 | 0.05 | 0.04 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,030 | 0.84 | 0.43 | 0.29 | 0.23 | 0.17 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,850 | 0.84 | 0.09 | 0.07 | 0.06 | 0.05 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.5 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

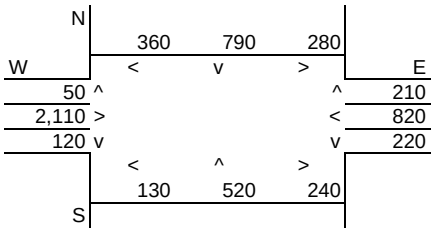
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

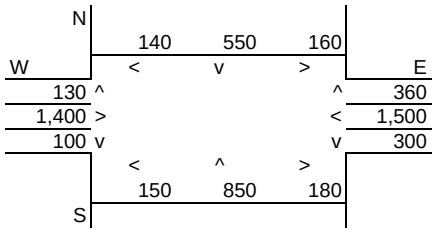
Intersection: Newland St and Warner Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,210 | N-S Road: | 2,190 |
| E-W Road: | 3,880 | E-W Road: | 3,900 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,210 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,880 | 0.84 | 0.31 | 0.20 | 0.16 | 0.11 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,190 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,900 | 0.84 | 0.31 | 0.20 | 0.16 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

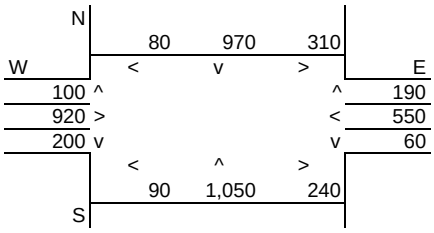
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

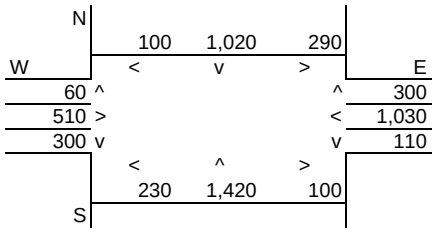
Intersection: Goldenwest St and Slater Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Goldenwest St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,700 | N-S Road: | 3,190 |
| E-W Road: | 2,270 | E-W Road: | 2,340 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,700 | 0.84 | 0.22 | 0.14 | 0.11 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,270 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,190 | 0.84 | 0.25 | 0.16 | 0.13 | 0.09 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,340 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

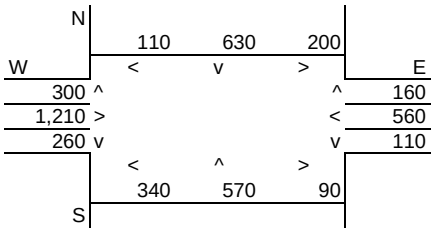
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

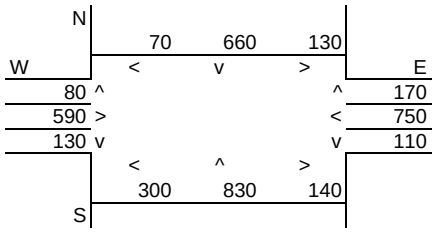
Intersection: Gothard St and Slater Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Gothard St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,000 | N-S Road: | 2,170 |
| E-W Road: | 2,780 | E-W Road: | 1,920 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,000 | 0.84 | 0.06 | 0.04 | 0.04 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,780 | 0.84 | 0.28 | 0.16 | 0.13 | 0.09 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,170 | 0.84 | 0.22 | 0.13 | 0.10 | 0.07 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,920 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.2 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Slater
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 220 | 2,130 | 200 | |
| W | | < | v | > | E |
| 170 | ^ | | | ^ | 100 |
| 800 | > | | | < | 580 |
| 210 | v | | | v | 110 |
| | | < | ^ | > | |
| | | 170 | 1,650 | 70 | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 210 | 1,860 | 200 | |
| W | | < | v | > | E |
| 210 | ^ | | | ^ | 180 |
| 730 | > | | | < | 600 |
| 200 | v | | | v | 200 |
| | | < | ^ | > | |
| | | 250 | 2,210 | 130 | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,470 | N-S Road: | 4,870 |
| E-W Road: | 2,150 | E-W Road: | 2,200 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,470 | 0.84 | 0.32 | 0.21 | 0.17 | 0.13 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,150 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,870 | 0.84 | 0.35 | 0.23 | 0.19 | 0.14 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,200 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

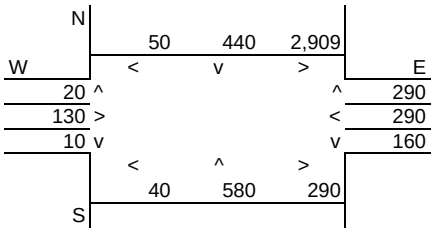
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

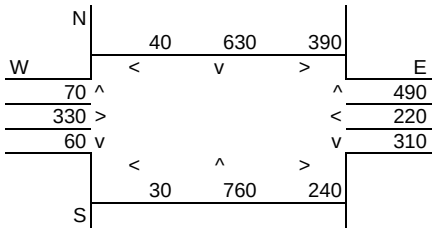
Intersection: Gothard St and Talbert Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Gothard St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,289 | N-S Road: | 2,380 |
| E-W Road: | 4,069 | E-W Road: | 1,980 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 4,289 | 0.84 | 0.43 | 0.25 | 0.19 | 0.14 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 4,069 | 0.84 | 0.11 | 0.09 | 0.08 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,380 | 0.84 | 0.24 | 0.14 | 0.11 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,980 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.3 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.3 | 5.1 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

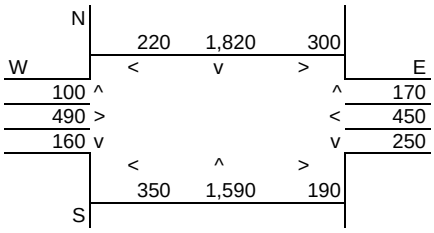
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

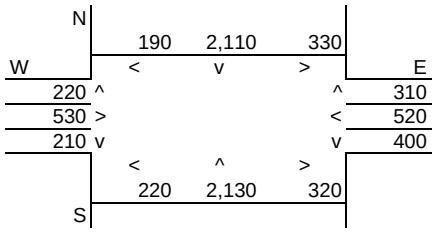
Intersection: Beach Blvd and Talbert
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 4,360 | N-S Road: | 5,390 |
| E-W Road: | 1,850 | E-W Road: | 2,410 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 4,360 | 0.84 | 0.31 | 0.21 | 0.17 | 0.12 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,850 | 0.84 | 0.04 | 0.04 | 0.03 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,390 | 0.84 | 0.38 | 0.26 | 0.21 | 0.15 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,410 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Newland St and Talbert Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 130 | 620 | 170 | |
| W | < | v | > | E |
| 50 | ^ | | ^ | 120 |
| 950 | > | | < | 500 |
| 90 | v | | v | 70 |
| | < | ^ | > | |
| | 220 | 710 | 180 | |
| | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 100 | 660 | 260 | |
| W | < | v | > | E |
| 340 | ^ | | ^ | 200 |
| 810 | > | | < | 1,000 |
| 170 | v | | v | 110 |
| | < | ^ | > | |
| | 210 | 700 | 100 | |
| | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,890 | N-S Road: | 2,260 |
| E-W Road: | 1,990 | E-W Road: | 2,630 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,890 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,990 | 0.84 | 0.20 | 0.12 | 0.09 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,260 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,630 | 0.84 | 0.26 | 0.15 | 0.12 | 0.08 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Garfield Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 130 | 1,160 | 250 | | |
| W | < | v | > | E | |
| 200 | ^ | | ^ | 140 | |
| 630 | > | | < | 420 | |
| 250 | v | | v | 120 | |
| | < | ^ | > | | |
| | 180 | 1,370 | 90 | | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 200 | 1,600 | 270 | | |
| W | < | v | > | E | |
| 330 | ^ | | ^ | 160 | |
| 520 | > | | < | 640 | |
| 360 | v | | v | 250 | |
| | < | ^ | > | | |
| | 350 | 1,680 | 190 | | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,250 | N-S Road: | 4,430 |
| E-W Road: | 1,810 | E-W Road: | 2,400 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,250 | 0.84 | 0.26 | 0.17 | 0.13 | 0.10 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,810 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,430 | 0.84 | 0.35 | 0.23 | 0.18 | 0.13 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,400 | 0.84 | 0.07 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

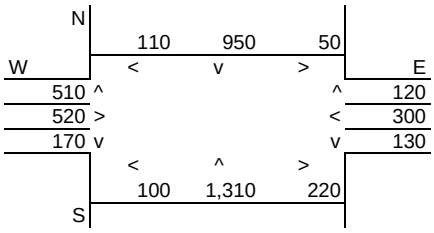
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

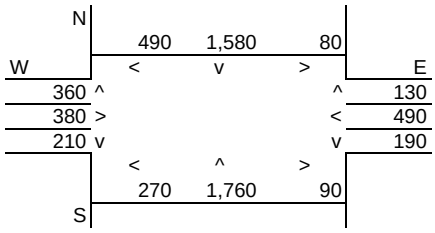
Intersection: Brookhurst St and Garfield Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,050 | N-S Road: | 4,400 |
| E-W Road: | 1,710 | E-W Road: | 2,200 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,050 | 0.84 | 0.24 | 0.16 | 0.13 | 0.09 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,710 | 0.84 | 0.05 | 0.04 | 0.03 | 0.02 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,400 | 0.84 | 0.35 | 0.23 | 0.18 | 0.13 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,200 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

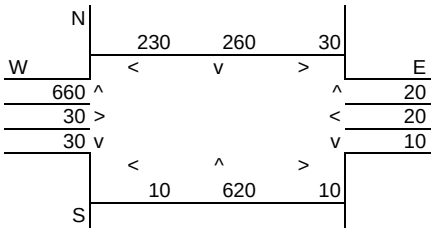
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

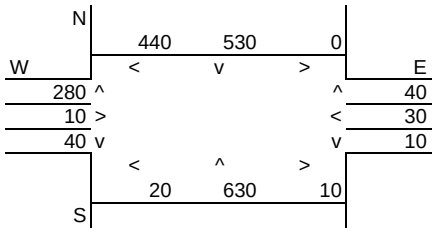
Intersection: Ward St and Garfield Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Ward St | At Grade | 2 | 35 | 35 |
| East-West Roadway: | Garfield Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,820 | N-S Road: | 1,920 |
| E-W Road: | 980 | E-W Road: | 820 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 14.0 | 7.6 | 5.7 | 4.0 | 1,820 | 0.84 | 0.21 | 0.12 | 0.09 | 0.06 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 980 | 0.84 | 0.03 | 0.02 | 0.02 | 0.01 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 14.0 | 7.6 | 5.7 | 4.0 | 1,920 | 0.84 | 0.23 | 0.12 | 0.09 | 0.06 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 820 | 0.84 | 0.02 | 0.02 | 0.02 | 0.01 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.2 | 5.2 | 3.3 |
| 25 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Yorktown Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Yorktown Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 120 | 1,110 | 100 | |
| W | < | v | > | E |
| 170 ^ | | | ^ | 120 |
| 570 > | | | < | 420 |
| 180 v | | | v | 160 |
| | < | ^ | > | |
| | 120 | 1,150 | 190 | |
| | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | |
|---|---|---|---|---|
| | N | | | |
| | 160 | 1,510 | 200 | |
| W | < | v | > | E |
| 200 ^ | | | ^ | 160 |
| 590 > | | | < | 640 |
| 90 v | | | v | 110 |
| | < | ^ | > | |
| | 200 | 1,720 | 240 | |
| | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,910 | N-S Road: | 3,950 |
| E-W Road: | 1,580 | E-W Road: | 1,940 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,910 | 0.84 | 0.23 | 0.15 | 0.12 | 0.09 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,580 | 0.84 | 0.04 | 0.03 | 0.03 | 0.02 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,950 | 0.84 | 0.32 | 0.20 | 0.16 | 0.12 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,940 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.1 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

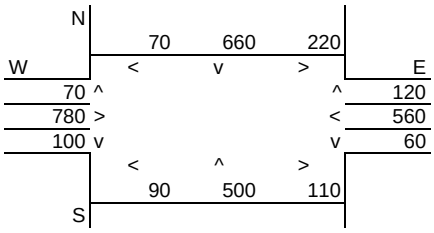
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

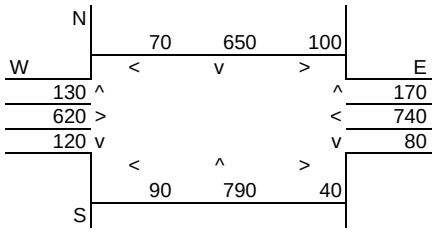
Intersection: Newland St and Yorktown Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Newland St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Yorktown Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,640 | N-S Road: | 1,910 |
| E-W Road: | 1,850 | E-W Road: | 1,770 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,640 | 0.84 | 0.05 | 0.04 | 0.03 | 0.02 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,850 | 0.84 | 0.18 | 0.11 | 0.08 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,910 | 0.84 | 0.19 | 0.11 | 0.09 | 0.06 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,770 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.2 | 5.2 | 3.3 |
| 25 Feet from Roadway Edge | 5.1 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

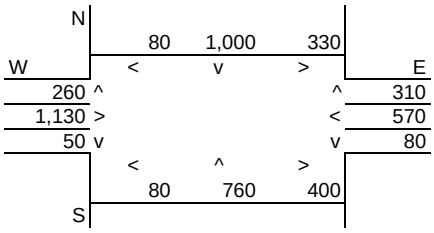
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

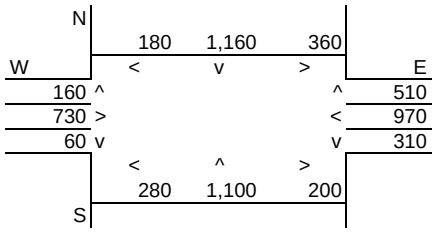
Intersection: Beach Blvd and Adams Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,740 | N-S Road: | 3,470 |
| E-W Road: | 2,820 | E-W Road: | 3,080 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,740 | 0.84 | 0.06 | 0.05 | 0.05 | 0.04 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,820 | 0.84 | 0.23 | 0.14 | 0.12 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,470 | 0.84 | 0.28 | 0.18 | 0.14 | 0.10 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,080 | 0.84 | 0.07 | 0.06 | 0.05 | 0.04 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

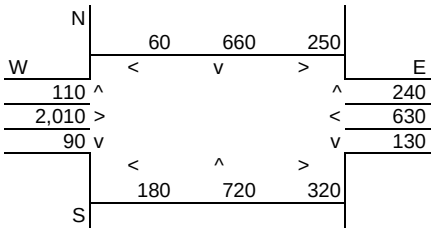
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

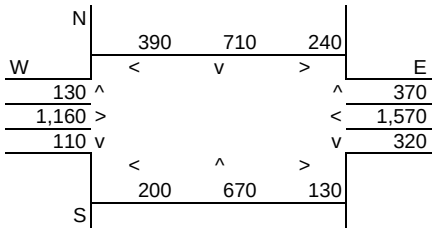
Intersection: Magnolia Ave and Adams Ave
Analysis Condition: 2030

| | | | No. of | Average Speed | |
|---|---|---|---|---|---|
| | | Roadway Type | Lanes | A.M. | P.M. |
| North-South Roadway: | Magnolia Ave | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,100 | N-S Road: | 2,510 |
| E-W Road: | 3,580 | E-W Road: | 3,790 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,100 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,580 | 0.84 | 0.29 | 0.18 | 0.15 | 0.11 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,510 | 0.84 | 0.07 | 0.05 | 0.05 | 0.04 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,790 | 0.84 | 0.30 | 0.19 | 0.16 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

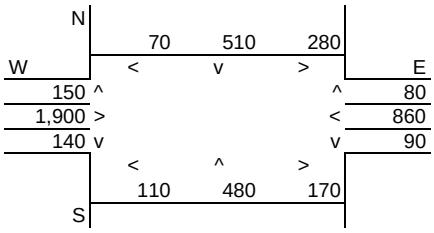
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

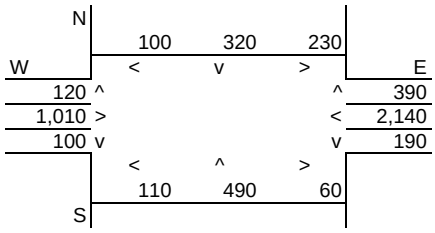
Intersection: Bushard St and Adams Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Bushard St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,570 | N-S Road: | 1,650 |
| E-W Road: | 3,380 | E-W Road: | 4,020 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,570 | 0.84 | 0.04 | 0.03 | 0.03 | 0.02 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,380 | 0.84 | 0.27 | 0.17 | 0.14 | 0.10 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,650 | 0.84 | 0.05 | 0.04 | 0.03 | 0.02 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,020 | 0.84 | 0.32 | 0.21 | 0.17 | 0.12 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

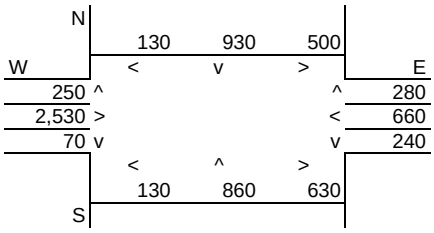
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

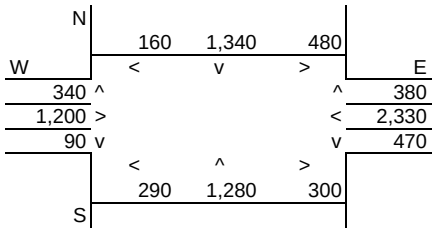
Intersection: Brookhurst St and Adams Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Adams Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,950 | N-S Road: | 3,980 |
| E-W Road: | 4,840 | E-W Road: | 5,160 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,950 | 0.84 | 0.07 | 0.06 | 0.05 | 0.04 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,840 | 0.84 | 0.39 | 0.25 | 0.20 | 0.14 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,980 | 0.84 | 0.09 | 0.08 | 0.07 | 0.06 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 5,160 | 0.84 | 0.41 | 0.26 | 0.21 | 0.15 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.5 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

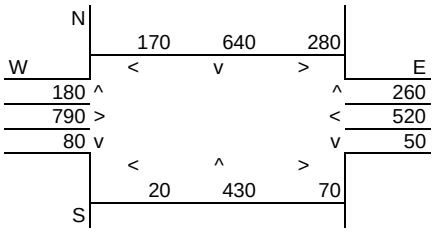
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

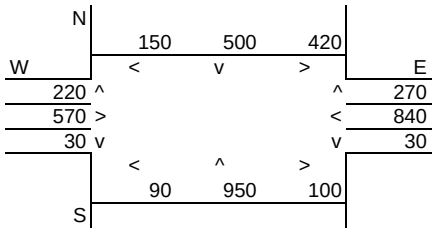
Intersection: Beach Blvd and Atlanta Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Atlanta Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,960 | N-S Road: | 2,510 |
| E-W Road: | 1,970 | E-W Road: | 2,230 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,960 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 1,970 | 0.84 | 0.20 | 0.12 | 0.09 | 0.06 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 2,510 | 0.84 | 0.20 | 0.13 | 0.10 | 0.07 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,230 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.2 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

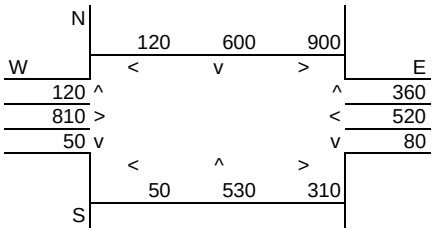
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

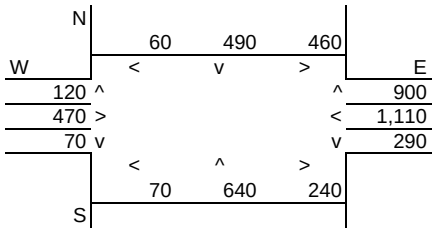
Intersection: Brookhurst Ave and Hamilton Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst Ave | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Hamilton Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,630 | N-S Road: | 2,670 |
| E-W Road: | 2,980 | E-W Road: | 3,470 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,630 | 0.84 | 0.06 | 0.05 | 0.04 | 0.04 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,980 | 0.84 | 0.30 | 0.18 | 0.14 | 0.10 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,670 | 0.84 | 0.06 | 0.05 | 0.04 | 0.04 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,470 | 0.84 | 0.35 | 0.20 | 0.16 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

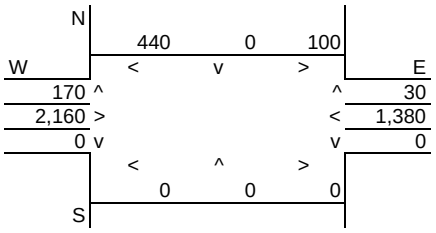
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

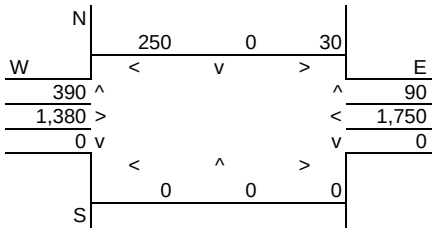
Intersection: Seapoint Ave and PCH
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Seapoint Ave | At Grade | 2 | 35 | 35 |
| East-West Roadway: | PCH | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 740 | N-S Road: | 760 |
| E-W Road: | 4,150 | E-W Road: | 3,770 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.7 | 2.7 | 2.2 | 1.7 | 740 | 0.84 | 0.02 | 0.02 | 0.01 | 0.01 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 4,150 | 0.84 | 0.41 | 0.24 | 0.19 | 0.13 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.7 | 2.7 | 2.2 | 1.7 | 760 | 0.84 | 0.02 | 0.02 | 0.01 | 0.01 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,770 | 0.84 | 0.38 | 0.22 | 0.17 | 0.12 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

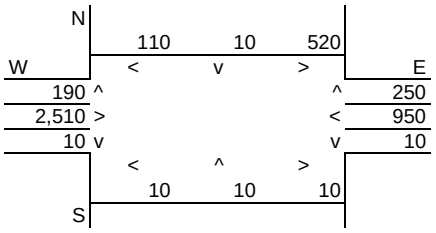
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

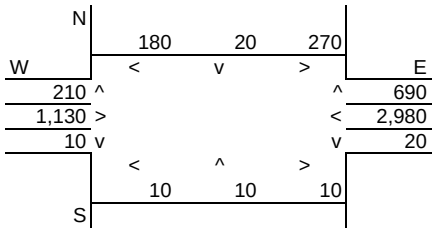
Intersection: Brookhurst St and PCH
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookhurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | PCH | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,090 | N-S Road: | 1,380 |
| E-W Road: | 4,250 | E-W Road: | 5,100 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,090 | 0.84 | 0.03 | 0.02 | 0.02 | 0.02 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,250 | 0.84 | 0.34 | 0.22 | 0.17 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,380 | 0.84 | 0.03 | 0.03 | 0.02 | 0.02 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 5,100 | 0.84 | 0.41 | 0.26 | 0.21 | 0.15 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Westminster Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Westminster Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 120 | 3,400 | 220 | | |
| W | < | v | > | E | |
| 220 | ^ | | ^ | 130 | |
| 660 | > | | < | 490 | |
| 190 | v | | v | 140 | |
| | < | ^ | > | | |
| | 240 | 2,070 | 70 | | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 170 | 2,500 | 250 | | |
| W | < | v | > | E | |
| 260 | ^ | | ^ | 220 | |
| 650 | > | | < | 660 | |
| 210 | v | | v | 250 | |
| | < | ^ | > | | |
| | 400 | 2,900 | 120 | | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | A.M. | | P.M. |
|---|---|---|---|
| N-S Road: | 6,160 | N-S Road: | 6,380 |
| E-W Road: | 1,920 | E-W Road: | 2,350 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,160 | 0.84 | 0.44 | 0.29 | 0.24 | 0.18 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 1,920 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,380 | 0.84 | 0.46 | 0.31 | 0.25 | 0.18 |
| East-West Road | 2.8 | 2.3 | 2.0 | 1.7 | 2,350 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.5 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.3 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Hazard Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Hazard Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 120 | 3,450 | 120 | |
| W | < | | v | > | E |
| 50 | ^ | | | ^ | 170 |
| 300 | > | | | < | 350 |
| 120 | v | | | v | 90 |
| | < | | ^ | > | |
| | | 150 | 2,610 | 30 | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 60 | 2,430 | 160 | |
| W | < | | v | > | E |
| 110 | ^ | | | ^ | 200 |
| 430 | > | | | < | 360 |
| 60 | v | | | v | 80 |
| | < | | ^ | > | |
| | | 130 | 3,410 | 80 | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | A.M. | P.M. |
|---|---|---|
| N-S Road: | 6,520 | 6,370 |
| E-W Road: | 1,090 | 1,310 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,520 | 0.84 | 0.47 | 0.31 | 0.25 | 0.19 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,090 | 0.84 | 0.03 | 0.02 | 0.02 | 0.02 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,370 | 0.84 | 0.45 | 0.30 | 0.25 | 0.18 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,310 | 0.84 | 0.04 | 0.03 | 0.02 | 0.02 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.5 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and Bolsa Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | Bolsa Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 350 | 2,570 | 160 | |
| W | < | v | > | | E |
| 230 | ^ | | ^ | | 180 |
| 650 | > | | < | | 590 |
| 530 | v | | v | | 150 |
| | < | ^ | > | | |
| | | 310 | 2,400 | 10 | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 290 | 2,600 | 230 | |
| W | < | v | > | | E |
| 460 | ^ | | ^ | | 280 |
| 660 | > | | < | | 850 |
| 430 | v | | v | | 190 |
| | < | ^ | > | | |
| | | 290 | 2,870 | 50 | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 5,970 | N-S Road: | 6,730 |
| E-W Road: | 2,660 | E-W Road: | 2,980 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 5,970 | 0.84 | 0.43 | 0.29 | 0.23 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,660 | 0.84 | 0.07 | 0.06 | 0.05 | 0.04 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,730 | 0.84 | 0.48 | 0.32 | 0.26 | 0.19 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,980 | 0.84 | 0.08 | 0.07 | 0.06 | 0.04 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.6 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Beach Blvd and McFadden Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Beach Blvd | At Grade | 8 | 35 | 35 |
| East-West Roadway: | McFadden Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 290 | 2,670 | 220 | | |
| W | < | v | > | E | |
| 270 | ^ | | ^ | 180 | |
| 470 | > | | < | 480 | |
| 140 | v | | v | 460 | |
| | < | ^ | > | | |
| | 180 | 2,390 | 220 | | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | 290 | 2,580 | 240 | | |
| W | < | v | > | E | |
| 350 | ^ | | ^ | 190 | |
| 530 | > | | < | 580 | |
| 150 | v | | v | 530 | |
| | < | ^ | > | | |
| | 260 | 2,680 | 280 | | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 6,060 | N-S Road: | 6,480 |
| E-W Road: | 2,030 | E-W Road: | 2,350 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,060 | 0.84 | 0.43 | 0.29 | 0.23 | 0.17 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,030 | 0.84 | 0.06 | 0.04 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 8.5 | 5.7 | 4.6 | 3.4 | 6,480 | 0.84 | 0.46 | 0.31 | 0.25 | 0.19 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,350 | 0.84 | 0.07 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.5 | 3.5 |
| 25 Feet from Roadway Edge | 5.3 | 5.4 | 3.4 |
| 50 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

Intersection: Magnolia St and Warner Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Magnolia St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Warner Ave | At Grade | 6 | 35 | 35 |

A.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 150 | 890 | 350 | |
| W | < | | v | > | E |
| 240 | ^ | | | ^ | 50 |
| 2,030 | > | | | < | 910 |
| 50 | v | | | v | 200 |
| | < | | ^ | > | |
| | | 90 | 880 | 380 | |
| | | S | | | |

P.M. Peak Hour Traffic Volumes

| | | | | | |
|---|---|---|---|---|---|
| | | N | | | |
| | | 240 | 1,000 | 220 | |
| W | < | | v | > | E |
| 260 | ^ | | | ^ | 150 |
| 1,170 | > | | | < | 1,690 |
| 120 | v | | | v | 250 |
| | < | | ^ | > | |
| | | 170 | 790 | 230 | |
| | | S | | | |

Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,560 | N-S Road: | 2,660 |
| E-W Road: | 3,920 | E-W Road: | 3,710 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| | A | $A_1$ | $A_2$ | $A_3$ | B | C | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Reference CO Concentrations | | | | Traffic | Emission | Estimated CO Concentrations | | | |
| Roadway | Edge | 25 Feet | 50 Feet | 100 Feet | Volume | Factors[2] | Edge | 25 Feet | 50 Feet | 100 Feet |
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,560 | 0.84 | 0.07 | 0.06 | 0.05 | 0.04 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,920 | 0.84 | 0.31 | 0.20 | 0.16 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,660 | 0.84 | 0.07 | 0.06 | 0.05 | 0.04 |
| East-West Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,710 | 0.84 | 0.30 | 0.19 | 0.15 | 0.11 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.4 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

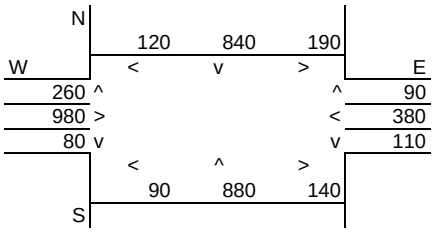
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

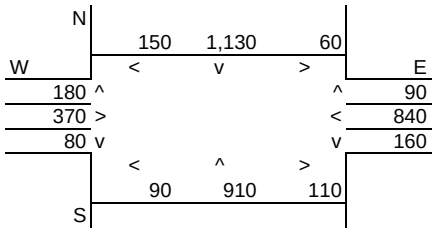
Intersection: Magnolia Ave and Slater Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Magnolia Ave | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Slater Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,380 | N-S Road: | 2,520 |
| E-W Road: | 1,910 | E-W Road: | 1,710 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,380 | 0.84 | 0.24 | 0.14 | 0.11 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,910 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,520 | 0.84 | 0.25 | 0.15 | 0.11 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,710 | 0.84 | 0.05 | 0.04 | 0.03 | 0.02 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.1 | 5.1 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

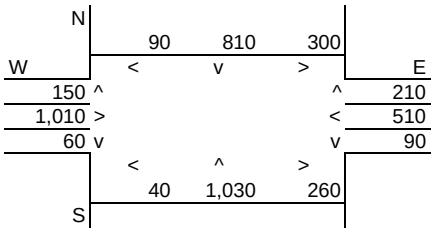
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

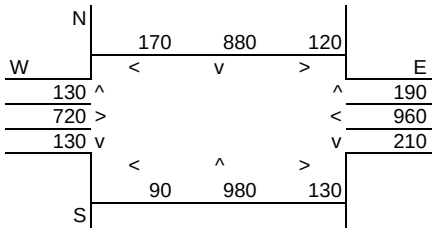
Intersection: Magnolia St and Talbert Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Magnolia St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 2,590 | N-S Road: | 2,470 |
| E-W Road: | 2,380 | E-W Road: | 2,330 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,590 | 0.84 | 0.26 | 0.15 | 0.12 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,380 | 0.84 | 0.07 | 0.05 | 0.04 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,470 | 0.84 | 0.25 | 0.15 | 0.11 | 0.08 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 2,330 | 0.84 | 0.06 | 0.05 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.3 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

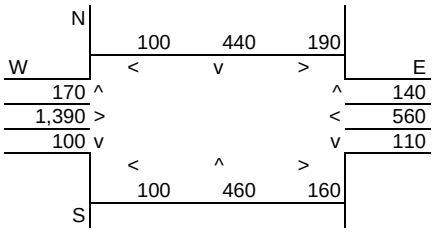
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

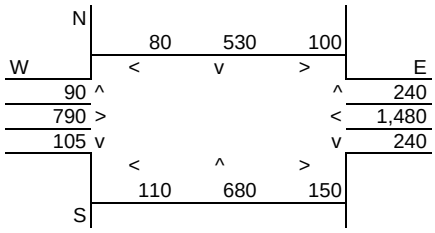
Intersection: Bushard St and Talbert Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Bushard St | At Grade | 4 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 1,500 | N-S Road: | 1,815 |
| E-W Road: | 2,550 | E-W Road: | 3,000 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,500 | 0.84 | 0.04 | 0.03 | 0.03 | 0.02 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 2,550 | 0.84 | 0.25 | 0.15 | 0.12 | 0.08 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,815 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,000 | 0.84 | 0.30 | 0.18 | 0.14 | 0.10 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.3 |
| 25 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |
| 50 Feet from Roadway Edge | 5.1 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

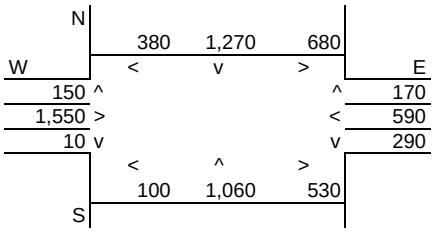
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

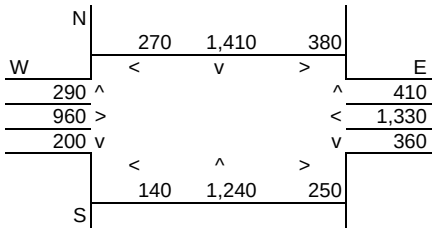
Intersection: Brookhurst St and Talbert Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Talbert Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,710 | N-S Road: | 4,000 |
| E-W Road: | 3,810 | E-W Road: | 3,690 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 2.8 | 2.3 | 2.0 | 1.7 | 3,710 | 0.84 | 0.09 | 0.07 | 0.06 | 0.05 |
| East-West Road | 11.9 | 7.0 | 5.4 | 3.8 | 3,810 | 0.84 | 0.38 | 0.22 | 0.17 | 0.12 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,000 | 0.84 | 0.32 | 0.20 | 0.16 | 0.12 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 3,690 | 0.84 | 0.10 | 0.08 | 0.07 | 0.05 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.5 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.3 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.3 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).

## SIMPLIFIED CALINE4 CARBON MONOXIDE ANALYSIS

**Project Number:** 100000407
**Project Title:** Beach Edinger

### Background Information

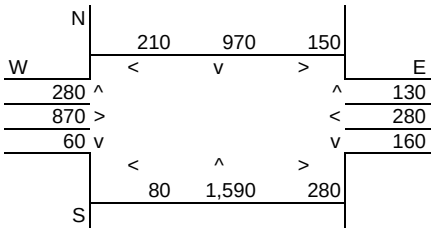
| | |
|---|---|
| Nearest Air Monitoring Station measuring CO: | Costa Mesa-Mesa Verde Drive |
| Background 1-hour CO Concentration (ppm): | 5.0 |
| Background 8-hour CO Concentration (ppm): | 3.1 |
| Persistence Factor: | 0.7 |
| Analysis Year: | 2030 |

### Roadway Data

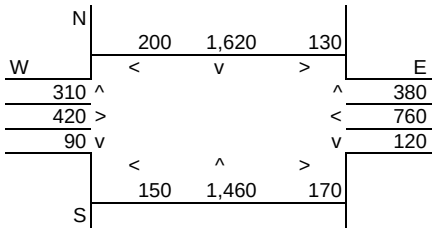
Intersection: Brookhurst St and Ellis Ave
Analysis Condition: 2030

| | | Roadway Type | No. of Lanes | Average Speed A.M. | Average Speed P.M. |
|---|---|---|---|---|---|
| North-South Roadway: | Brookurst St | At Grade | 6 | 35 | 35 |
| East-West Roadway: | Ellis Ave | At Grade | 4 | 35 | 35 |

A.M. Peak Hour Traffic Volumes




P.M. Peak Hour Traffic Volumes




Highest Traffic Volumes (Vehicles per Hour)

| | | | |
|---|---|---|---|
| N-S Road: | 3,330 | N-S Road: | 4,100 |
| E-W Road: | 1,870 | E-W Road: | 1,980 |

### Roadway CO Contributions and Concentrations

Emissions = (A x B x C) / 100,000[1]

| Roadway | A Reference CO Concentrations Edge | $A_1$ 25 Feet | $A_2$ 50 Feet | $A_3$ 100 Feet | B Traffic Volume | C Emission Factors[2] | Estimated CO Concentrations Edge | 25 Feet | 50 Feet | 100 Feet |
|---|---|---|---|---|---|---|---|---|---|---|
| A.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 3,330 | 0.84 | 0.27 | 0.17 | 0.14 | 0.10 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,870 | 0.84 | 0.05 | 0.04 | 0.03 | 0.03 |
| P.M. Peak Traffic Hour | | | | | | | | | | |
| North-South Road | 9.5 | 6.1 | 4.9 | 3.5 | 4,100 | 0.84 | 0.33 | 0.21 | 0.17 | 0.12 |
| East-West Road | 3.3 | 2.6 | 2.2 | 1.7 | 1,980 | 0.84 | 0.05 | 0.04 | 0.04 | 0.03 |

[1] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).
[2] Emission factors from EMFAC2007 (2008).

### Total Roadway CO Concentrations

Peak Hour Emissions = North-South Concentration + East-West Concentration + Background 1-hour Concentration[2]
8-Hour Emissions = ((Highest Peak Hour Concentration - Background 1-hour Concentration) x Persistence Factor) + Background 8-hour Concentration[2]

| | A.M. Peak Hour | P.M. Peak Hour | 8-Hour |
|---|---|---|---|
| Roadway Edge | 5.3 | 5.4 | 3.4 |
| 25 Feet from Roadway Edge | 5.2 | 5.3 | 3.3 |
| 50 Feet from Roadway Edge | 5.2 | 5.2 | 3.2 |

[2] Methodology from Bay Area Air Quality Management District *BAAQMD CEQA Guidelines* (1996).